IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

LAKE CARRIERS' ASSOCIATION, *Petitioner*, v. U.S. ENVIRONMENTAL PROTECTION AGENCY and JANE NISHIDA, Acting Administrator, U.S. Environmental Protection Agency *Respondents.*	Case No. 25-1027

PETITION FOR REVIEW

Pursuant to Section 509 of the Clean Water Act, 33 U.S.C. 1369, and Federal Rule of Appellate Procedure 15, the Lake Carriers' Association hereby petitions this Court for review of the final action of the United States Environmental Protection Agency Administrator entitled *Vessel Incidental Discharge National Standards of Performance*, which was published in the Federal Register at 89 Fed. Reg. 82,074 on October 9, 2024 (Attachment 1). The agency docket number for the rule is EPA-HQ-OW-2019-0482.

Dated: January 17, 2025

Respectfully submitted,

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RULE 26.1 CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Petitioner Lake Carriers' Association makes the following disclosure:

The Lake Carriers' Association is a trade association representing thirteen American companies operating forty-three U.S.-flag vessels on the Great Lakes. The Lake Carriers' Association promotes the common interests of its members, which are U.S.-flag vessel operators on the Great Lakes that are subject to the rule at issue in this case. The Lake Carriers' Association does not have any parent corporation and no publicly held corporation owns 10% or more of its stock.

Dated: January 17, 2025

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CERTIFICATE OF SERVICE

I hereby certify that on the 17th day of January 2025, a copy of the foregoing Petition for Review and Rule 26.1 Disclosure Statement was served via certified mail, return receipt requested, to each of the following addresses:

U.S. Environmental Protection Agency
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1200 Pennsylvania Ave., NW
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The Honorable Jane Nishida
Acting Administrator (1101A)
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The Honorable Merrick B. Garland
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Dated: January 17, 2025

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ATTACHMENT

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 139

EPA–HQ–OW–2019–0482; FRL–7218–01–OW

RIN 2040–AF92

Vessel Incidental Discharge National Standards of Performance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is promulgating a regulation under the Vessel Incidental Discharge Act that establishes Federal standards of performance for marine pollution control devices for discharges incidental to the normal operation of primarily non-Armed Forces and non-recreational vessels 79 feet in length and above into the waters of the United States or the waters of the contiguous zone. The Federal standards of performance were developed in coordination with the U.S. Coast Guard (USCG) and in consultation with interested Governors. The final standards, once made final, effective, and enforceable through corresponding USCG regulations addressing implementation, compliance, and enforcement, will control the discharge of pollutants from vessels described above and repeal certain existing Federal, State, and local vessel discharge requirements, thus streamlining regulation of such vessel incidental discharges. EPA is also promulgating procedures states must follow if they choose to petition EPA to require the use of an emergency best management practice to address aquatic nuisance species (ANS) or water quality concerns (''emergency order''), to review any standard of performance, regulation, or policy, to request additional requirements with respect to discharges in the Great Lakes, or to apply to EPA to prohibit one or more types of vessel discharges regulated by this rule into specified waters to provide greater environmental protection.

DATES: The effective date of this rule is November 8, 2024. The Federal standards of performance, however, become effective beginning on the date upon which the regulations promulgated by the Secretary pursuant to CWA section 312(p)(5) governing the implementation, compliance, and enforcement of the Federal standards of performance become final, effective, and enforceable. Per CWA section 312(p)(3)(c), as of that date, the requirements of the VGP and all regulations promulgated by the Secretary pursuant to section 1101 of the NANPCA (16 U.S.C. 4711) (as in effect on December 3, 2018), including the regulations contained in subparts C and D of 33 CFR part 151 and 46 CFR 162.060 (as in effect on December 3, 2018), shall be deemed repealed and have no force or effect. Similarly, as of that same date, any CWA section 401 certification requirement in Part 6 of the VGP, shall be deemed repealed and have no force or effect.

ADDRESSES: EPA established a docket for this action under Docket ID No. EPA–HQ–OW–2019–0482. All documents in the docket are listed on the *https://www.regulations.gov* website. Although listed in the index, some information is not publicly available, *e.g.,* Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through *https://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Jack Faulk, Oceans, Wetlands, and Communities Division, Office of Water (4504T), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460; telephone number: (202) 564–0768; email address: *faulk.jack@epa.gov.*

SUPPLEMENTARY INFORMATION: This supplementary information is organized as follows:

I. Executive Summary

Discharges incidental to the normal operation of a vessel, as defined in 33 U.S.C. 1322(a)(12), are referred to as ''incidental discharges'' or ''discharges'' in this publication for convenience. Incidental discharges contain pollutants that can adversely impact aquatic ecosystems and human health. Pollutants that may be found in these discharges include aquatic nuisance species (ANS), nutrients, bacteria or pathogens (*e.g., Escherichia coli* and fecal coliform), oil and grease, metals, as well as other toxic, nonconventional, and conventional pollutants (biochemical oxygen demand (BOD), total suspended solids (TSS), pH, fecal coliform, and oil and grease). These pollutants can have wide-ranging environmental and human health consequences that vary in degree depending on the type and number of vessels operating in a waterbody and the nature and extent of the discharge.

The Federal Water Pollution Control Act Amendments of 1972 [1] (commonly known as the Clean Water Act (CWA)), the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA), the Act to Prevent Pollution from Ships (APPS), and several other Federal, State, local, and international authorities have established over time various requirements for both domestic and international vessels. To clarify and streamline existing requirements, in December of 2018, the Vessel Incidental Discharge Act (VIDA) was signed into law. The VIDA established a new CWA section 312(p) titled, ''Uniform National Standards for Discharges Incidental to Normal Operation of Vessels.'' 33 U.S.C. 1322(p). The VIDA consolidates and restructures the existing regulatory framework applicable to incidental discharges of largely commercial vessels 79 feet in length and above. The VIDA does not apply to incidental discharges from vessels of the Armed Forces, recreational vessels, and floating craft that are permanently moored to a pier. Also, the VIDA does not apply to incidental discharges from small vessels (less than 79 feet in length) or fishing vessels, except for discharges of ballast water. The VIDA requires EPA to establish Federal standards of performance for marine pollution control devices and the USCG to establish corresponding implementing regulations to prevent or reduce the incidental discharge of pollutants from vessels.

More specifically, the new CWA section 312(p)(4)(A)(i) directs the EPA Administrator (''Administrator'') to develop Federal standards of performance, in consultation with interested Governors and with the concurrence of the Secretary of the department in which the USCG is operating (''Secretary''). With limited exceptions, the VIDA requires that the standards be at least as stringent as EPA's 2013 National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) requirements established under CWA section 402. *See* 33 U.S.C. 1322(p)(4)(B)(iii) (EPA standards); *id.* (5)(A)(ii) (USCG requirements). The VIDA also requires that the standards be technology-based using a similar approach outlined by the CWA for setting, among other things, effluent limitations guidelines. *Id.* (p)(4)(B)(i). The VIDA directs the USCG to develop corresponding implementation, compliance, and enforcement regulations within two years after EPA publishes the Federal standards of performance. *Id.* (p)(5). The USCG implementing regulations may also include requirements governing the design, construction, testing, approval, installation, and use of devices to achieve the EPA Federal standards of performance. *Id.* (p)(5)(B).

Existing requirements included in EPA's VGP, as well as the USCG's existing requirements under section 110 of NANPCA, remain in place until the new EPA and USCG regulations under CWA section 312(p) are final, effective, and enforceable. *Id.* (p)(3). In addition, the VIDA repealed the 2014 EPA NPDES Small Vessel General Permit (sVGP) and established that neither EPA nor the states shall require an NPDES permit for any discharge incidental to the normal operation of a vessel, other than ballast water, from a small vessel or fishing vessel, effective immediately upon the VIDA's enactment. *Id.* (p)(9)(C)(i).

The final rule establishes both general and specific discharge standards of performance for approximately 85,000 international and domestic non-Armed Forces, non-recreational vessels operating in the waters of the United States or the waters of the contiguous zone. The types of vessels covered under the final rule include but are not limited to public vessels of the United States, fishing vessels (for ballast water discharges only), passenger vessels such as cruise ships and ferries, barges, tugs and tows, offshore supply vessels, mobile offshore drilling units, tankers, bulk carriers, cargo ships, container ships, and research vessels. While most provisions are intended to apply to a wide range of vessels, the VIDA specified that fishing vessels would only be subject to ballast water provisions. *Id.* (p)(2)(B)(i)(III). The requirements are based on, as applicable, best available technology economically achievable, best conventional pollutant control technology, and best practicable technology currently available, including the use of best management practices (BMPs), to prevent or reduce the discharge of pollutants into the waters of the United States or the waters of the contiguous zone. *Id.* (p)(4)(B)(i) and (ii).

The general discharge standards of performance apply to all vessels and incidental discharges covered by the rule, as appropriate, and are organized into three categories: (1) General Operation and Maintenance, (2) Biofouling Management, and (3) Oil Management. 40 CFR 139.4 through 139.6. The general discharge standards of performance require BMPs to minimize the introduction of pollutants from discharges.

The specific discharge standards of performance establish requirements for discharges incidental to the normal operation of a vessel from the following 20 distinct pieces of equipment and systems: ballast tanks; bilges; boilers; cathodic protection; chain lockers; decks; desalination and purification systems; elevator pits; exhaust gas emission control systems; fire protection equipment; gas turbines; graywater systems; hulls and associated niche areas; inert gas systems; motor gasoline and compensating systems; non-oily machinery; pools and spas; refrigeration and air conditioning; seawater piping; and sonar domes. 40 CFR 139.10 through 139.29.

Pursuant to CWA section 312(p), the final discharge standards of performance are at least as stringent as the VGP, with some exceptions discussed below. 33 U.S.C.

[1] The Federal Water Pollution Control Act (FWPCA) is commonly referred to as the CWA following the 1977 amendments to the FWPCA. Public Law 95–217, 91 Stat. 1566 (1977). For ease of reference, the agencies will generally refer to the FWPCA in this notice as the CWA or the Act.

1322(p)(4)(D)(ii). The final standards, however, do not incorporate the VGP requirements verbatim. EPA is promulgating changes to the VGP requirements to transition the permit requirements into regulations that reflect national technology-based standards of performance, to improve clarity, enhance enforceability and implementation, and/or to incorporate new information and technology. In some cases, this results in EPA consolidating or renaming the VGP requirements to comport with the VIDA. The similarities and differences between the requirements in the final discharge standards of performance and the requirements in the VGP can be sorted into three distinct groups.

The first group consists of 13 discharge standards that are substantially the same as the requirements of the VGP: boilers; cathodic protection; chain lockers; decks; elevator pits; fire protection equipment; gas turbines; inert gas systems; motor gasoline and compensating systems; non-oily machinery; pools and spas; refrigeration and air conditioning; and sonar domes. These 13 discharge standards encompass the intent and stringency of the VGP but include other changes to conform the requirements to the VIDA (*e.g.,* extent of regulated waters, consistency across discharge standards, enforceability and legal precision, minor clarifications).

The second group consists of two discharge standards that are consistent but slightly modified from the VGP to moderately increase stringency or provide language clarifications: bilges and desalination and purification systems.

The third group consists of five discharge standards that contain the most significant modifications from the VGP: ballast tanks, exhaust gas emission control systems, graywater systems, hulls and associated niche areas, and seawater piping. In addition, the final rule modifies slightly the VGP requirements as they apply in federally-protected waters for five discharges: chain lockers, decks, hulls and associated niche areas, pools and spas, and seawater piping. These modifications address specific VIDA requirements as well as reflect new information that has become available since the issuance of the VGP.

CWA section 312(p) also directs EPA to establish additional discharge requirements for vessels operating in certain bodies of water. *See* CWA section 312(p)(10(A) (Great Lakes); *Id.* (p)(10(C) (Pacific Region); and *Id.* (p)(4)(B) (waters subject to Federal protection, in whole or in part, for conservation purposes (''federally-protected waters'')). These requirements further prevent or reduce the discharge of pollutants into these waterbodies that may contain unique ecosystems, support distinctive species of aquatic flora and fauna, contend with more sensitive water quality issues, or otherwise require greater protection.

Finally, as required under CWA section 312(p), the final rule contains specific procedural requirements for states to petition EPA to establish different discharge standards, issue emergency orders, or establish a complete prohibition of one or more discharges into specified State waters (''no-discharge zones''). 40 CFR 139.50 through 139.52.

II. Legal Authority

EPA promulgates this rule under CWA sections 301, 304, 307, 308, 312, and 501 as amended by the Vessel Incidental Discharge Act. 33 U.S.C. 1311, 1314, 1317, 1318, 1322, and 1361. This final rule fulfills EPA's obligation under CWA section 312(p) to establish technology-based Federal standards of performance for discharges incidental to the normal operation of primarily non-Armed Forces, non-recreational vessels 79 feet in length and above. This final rule also fulfills EPA's consent decree obligation to sign (and promptly thereafter transmit to the Office of **Federal Register**) a decision taking final action following notice and comment rulemaking with regard to EPA's October 26, 2020, proposed rule pertaining to Federal standards of performance for marine pollution control devices for discharges incidental to the normal operation of a vessel under CWA section 312(p)(4)(A)(i), 33 U.S.C. 1322(p)(4)(A)(i) (Vessel Incidental Discharge National Standards of Performance, 85 FR 67818–01 (proposed October 26, 2020)). (Consent Decree, *Center for Biological Diversity, et al.* v. *Regan, et al.,* Case No. 3:23–cv–535 (N.D. Cal. Dec. 13, 2023).

Under 33 U.S.C. 1369(b)(4)(A), any interested person may file a petition for review of EPA's final agency action under 33 U.S.C. 1322(p). Any such petition may be filed only in the United States Court of Appeals for the District of Columbia Circuit. 33 U.S.C. 1369(b)(4)(B).

III. Background

A. Clean Water Act

The CWA's regulatory regime to control vessel discharges has changed over time. The first sentence of the CWA states, ''[t]he objective of [the Act] is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'' 33 U.S.C. 1251(a). CWA section 301(a) provides that ''the discharge of any pollutant by any person shall be unlawful'' unless the discharge is in compliance with certain other sections of the Act. 33 U.S.C. 1311(a). Among its provisions, the CWA authorizes EPA and other Federal agencies to address the discharge of pollutants from vessels. As such, EPA established regulations to address vessel discharges authorized under CWA section 311 (addressing oil), section 312 (addressing sewage and discharges incidental to the normal operation of a vessel of the Armed Forces), and section 402 (pursuant to which EPA established the VGP).

From 1972 to 2005, EPA vessel regulations were primarily limited to addressing the discharge of oil and sewage under CWA sections 311 and 312, respectively. In December of 2003, a long-standing exclusion of discharges incidental to the normal operation of vessels from the CWA section 402 NPDES permitting program became the subject of a lawsuit in the U.S. District Court for the Northern District of California (*Nw. Envtl. Advocates* v. *EPA,* No. C–03–05760–SI, 2005 WL 756614). The lawsuit arose from EPA's September 2003 denial of a January 1999 rulemaking petition submitted to EPA by parties concerned about the effects of ballast water discharges. Prior to the lawsuit, EPA, through a 1973 regulation, had excluded discharges incidental to the normal operation of vessels from the CWA section 402 permitting program. *See* 38 FR 13528, May 22, 1973. The petition asked the Agency to repeal its regulation at 40 CFR 122.3(a) that excludes certain discharges incidental to the normal operation of vessels from the requirement to obtain an NPDES permit. The petition asserted that vessels are ''point sources'' requiring NPDES permits for discharges to U.S. waters; that EPA lacks authority to exclude point source discharges from vessels from the NPDES program; that ballast water must be regulated under the NPDES program because it contains invasive plant and animal species as well as other materials of concern (*e.g.,* oil, chipped paint, sediment, and toxins in ballast water sediment); and that enactment of CWA section 312(n) (the Uniform National Discharge Standards) in 1996 demonstrated Congress's rejection of the exclusion.

In March 2005, the court determined the exclusion exceeded the Agency's authority under the CWA and subsequently declared in 2006 that

''[t]he blanket exemption for discharges incidental to the normal operation of a vessel, contained in 40 CFR 122.3(a), shall be vacated as of September 30, 2008.'' *Nw. Envtl. Advocates* v. *EPA,* C 03–05760 SI, 2006 WL 2669042, at *15 (N.D. Cal. Sept. 18, 2006), *aff'd* 537 F.3d 1006 (9th Cir. 2008). Shortly thereafter, Congress enacted two pieces of legislation to exempt discharges incidental to the normal operation of certain types of vessels from the requirement to obtain a permit. The first of these, the Clean Boating Act of 2008 (Pub. L. 110–288, July 28, 2008), amended the CWA to provide that discharges incidental to the normal operation of recreational vessels are not subject to NPDES permitting, and created a new regulatory regime to be implemented by EPA and the USCG under a new CWA section 312(o). The second piece of legislation provided for a temporary moratorium on NPDES permitting for discharges, excluding ballast water, subject to the 40 CFR 122.3(a) exclusion from commercial fishing vessels (as defined in 46 U.S.C. 2101 and regardless of size) and those other non-recreational vessels less than 79 feet in length. S. 3298, Public Law 110–299 (July 31, 2008).

In response to the court decision and the legislation, EPA issued the first VGP in December 2008 for discharges incidental to the normal operation of non-recreational, non-Armed Forces vessels 79 feet in length and above. *See* 73 FR 79473, December 29, 2008. Additionally, in September 2014, EPA issued the sVGP for discharges from non-recreational, non-Armed Forces vessels less than 79 feet in length. *See* 79 FR 53702, September 10, 2014. Upon expiration of the 2008 permit, EPA issued the second VGP in 2013. *See* 78 FR 21938, April 12, 2013.

After the EPA issuance of the VGP under the CWA and the USCG promulgation of regulations under the NANPCA, the vessel community expressed concerns regarding the lack of uniformity, duplication, and confusion associated with the vessel regulatory regime. *See* Errata to S. Rep. No. 115–89 (2019) (''VIDA Senate Report''), at 3–5 (discussing these and similar concerns), available at *https://www.congress.gov/115/crpt/srpt89/CRPT-115srpt89-ERRATA.pdf.* In response, members of Congress introduced various pieces of legislation to modify and clarify the regulation and management of ballast water and other incidental vessel discharges. In December 2018, President Trump signed into law the Frank LoBiondo Coast Guard Authorization Act of 2018, which included the VIDA. Public Law. 115–282, tit. IX (2018) (codified primarily at 33 U.S.C. 1322(p)). The VIDA restructures the way EPA and the USCG regulate incidental vessel discharges from non-Armed Forces, non-recreational vessels and amended CWA section 312 to include a new subsection (p) titled, ''Uniform National Standards for Discharges Incidental to Normal Operation of Vessels.'' CWA section 312(p), among other things, immediately repealed EPA's 2014 sVGP and requires EPA and the USCG to develop new regulations to replace the existing EPA VGP and USCG vessel discharge requirements. *See generally* 33 U.S.C. 1322(p)(9)(C)(i) (repealing sVGP); *id.* (p)(4)(EPA's regulations); *id.* (p)(5) (USCG's regulations). The VIDA also specifies that, effective immediately upon enactment of the VIDA, neither EPA nor NPDES-authorized states may require, or in any way modify, a permit under CWA section 402 (NPDES) for any discharge incidental to the normal operation of a vessel subject to regulation under section 312(p) or from a small vessel (less than 79 feet in length) or fishing vessel (of any size). *Id.* (p)(9)(C)(ii).

Specifically, CWA section 312(p)(4) directs the Administrator, with concurrence of the Secretary [2] and in consultation with interested Governors, to promulgate Federal standards of performance for marine pollution control devices for each type of discharge incidental to the normal operation of non-recreational and non-Armed Forces vessels.[3] CWA section 312(p)(5) also directs the Secretary to develop corresponding implementing regulations to govern the implementation, compliance, and enforcement of the Federal standards of performance. Additionally, CWA section 312(p) generally preempts states from establishing more stringent discharge standards once the USCG implementing regulations required under CWA section 312(p)(5)(A)–(C) are final, effective, and enforceable. *Id.* (p)(9)(A). The VIDA, however, includes several exceptions to this expressed preemption (33 U.S.C. 1322(p)(9)(A)(ii)–(v); VIDA Senate Report, at 15 (discussing these exceptions)) including a savings clause (33 U.S.C. 1322(p)(9)(A)(vi)) and provisions for states working directly with EPA and/or the USCG to pursue additional requirements such as the establishment of no-discharge zones for one or more incidental discharges (33 U.S.C. 1322(p)(10)(D)). The VIDA also establishes several programs to address invasive species, including the establishment of the ''Great Lakes and Lake Champlain Invasive Species Program'' research and development program and the ''Coastal Aquatic Invasive Species Mitigation Grant Program.''

[2] Concurrence procedures are governed by 33 U.S.C. 1322(p)(4)(A)(ii). Under those procedures, the Administrator must submit to the Secretary a request for written concurrence with respect to a proposed standard of performance. If the Secretary fails to concur, it does not prevent the Administrator from promulgating standard of performance, but does require the Administrator to respond to the Secretary's written objections.

[3] CWA section 312(b) provides authority for EPA to establish Federal standards of performance for sewage from vessels within the meaning of ''sewage'' as defined in section 312(a)(6). Thus, the discharge of sewage from vessels, is not included in this CWA section 312(p) rulemaking, except when commingled with other discharges incidental to the normal operation of a vessel, as authorized in CWA section 312(p)(2)(A)(ii). EPA and the USCG regulate sewage from vessels under CWA section 312(b) as codified in 40 CFR part 140 (marine sanitation device standard) and 33 CFR part 159 subparts A through D (requirements for the design, construction, certification, installation, and operation of marine sanitation devices).

B. Additional U.S. and International Authorities

During the development of the final rule, EPA reviewed other U.S. laws and international authorities that address discharges incidental to the normal operation of a vessel. Where the requirements established under these authorities are currently being met and implemented, EPA generally considers them to be technologically available and economically achievable as that term is used in the ''best available technology economically achievable'' control level specified in CWA section 301(b). As appropriate, EPA considered these requirements while developing this final rule.

As expressly provided in the VIDA, this final rule will not affect the requirements for vessels established under any other provision of Federal law. 33 U.S.C. 1322(p)(9)(B). EPA provides a short summary of these U.S. authorities, as well as some international authorities, below.

International Convention for the Prevention of Pollution From Ships, the Act To Prevent Pollution from Ships, and Implementing Regulations

The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) is an international treaty that regulates certain discharges from vessels. MARPOL Annexes regulate different types of vessel pollution; the United States is a party to Annexes I, II, III, V, and VI that address prevention/control of pollution from oil, noxious liquid substances in bulk, harmful substances carried by sea in packaged form, and garbage, and

prevention of air pollution, respectively. MARPOL is primarily implemented in the United States by APPS, 33 U.S.C. 1901 *et seq.* The USCG is the lead agency for APPS implementation and issued implementing regulations primarily found at 33 CFR part 151. Those requirements already apply to many of the vessels covered by the final rule.

APPS regulates the discharge of oil and oily mixtures, noxious liquid substances, and garbage, including food wastes and plastic. With respect to oil and oily mixtures, the USCG regulations at 33 CFR 151.10 prohibit ''any discharge of oil or oily mixtures into the sea from a ship'' except when certain conditions are met. Exceptions include a discharge oil content of less than 15 parts per million (ppm) and when the ship operates oily water separating equipment, a bilge monitor, a bilge alarm, or a combination thereof.

Substances regulated as noxious liquid substances under APPS are divided into four categories based on their potential to harm marine resources and human health. Under 46 CFR 153.1128, discharges of noxious liquid substances residues at sea may only take place at least 12 nautical miles (NM) from the nearest land, among other requirements. Because discharges at least 12 NM from the nearest land are outside the geographic scope of the VIDA, the final rule does not affect the requirements for vessels established under 46 CFR 153.1128 pursuant to APPS.

MARPOL Annex III addresses harmful substances in packaged form and is implemented in the United States by the Hazardous Materials Transportation Authorization Act of 1994, as amended (49 U.S.C. 5901 *et seq.*), and regulations appearing at 46 CFR part 148 and 49 CFR part 176. The regulatory provisions establish labeling, packaging, and stowage requirements for such materials to help avoid accidental loss or spillage during transport. The final rule does not regulate loss or spillage of transported materials; however, the final rule establishes BMPs to help reduce or prevent the loss of materials and debris overboard.

Oil Pollution Act (33 U.S.C. 2701 *et seq.*)

The Oil Pollution Act of 1990 and the associated USCG implementing regulations at 33 CFR parts 155 and 157 also address oil and oily mixture discharges from vessels. These USCG regulations establish and reinforce the 15 ppm discharge standard under APPS for oil and oily mixtures for seagoing ships and require most vessels to have an oily water separator. Oceangoing vessels of less than 400 gross tonnage (GT) must either have an approved oily water separator or retain oily water mixtures on board for disposal to an approved reception facility onshore. Oceangoing vessels of 400 GT and above, but less than 10,000 GT, except vessels that carry ballast water in their fuel oil tanks, must be fitted with ''approved 15 parts per million (ppm) oily-water separating equipment for the processing of oily mixtures from bilges or fuel oil tank ballast.'' 33 CFR 155.360(a)(1). Oceangoing ships of 10,000 gross tonnage and above and oceangoing ships of 400 gross tonnage and above that carry ballast water in their fuel oil tanks, must be fitted with approved 15 ppm oily water separating equipment for the processing of oily mixtures from bilges or fuel oil tank ballast, a bilge alarm, and a means for automatically stopping any discharge of oily mixture when the oil content in the effluent exceeds 15 ppm. 33 CFR 155.370. 33 CFR part 155 also references oil containment and cleanup equipment and procedures for preventing and reacting to oil spills and discharges. The final rule is consistent with the existing requirements for fuel and oil established under the Oil Pollution Act and APPS and does not otherwise affect the requirements for vessels established under these Acts.

Clean Water Act Section 311 (33 U.S.C. 1321)

CWA section 311, the Oil and Hazardous Substances Liability Act, states that it is a policy of the United States that there should be no discharges of oil or hazardous substances into the waters of the United States, adjoining shorelines, and certain specified areas, except where permitted under Federal regulations (*e.g.,* the NPDES program). As such, the Act prohibits the discharge of oil or hazardous substances into these areas in such quantities as may be harmful. Further, the Act states that the President shall, by regulation, determine those quantities of oil and any hazardous substances that may be harmful if discharged. EPA defines the discharge of oil in such quantities as may be harmful as those that violate applicable water quality standards or ''cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.'' 40 CFR 110.3. Sheen is clarified to mean ''an iridescent appearance on the surface of the water.'' 40 CFR 110.1. The final rule prohibits the discharge of oil, including oily mixtures, in such quantities as may be harmful. 40 CFR 139.56(c).

Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.).

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) regulates the distribution, sale, and use of pesticides. One of the primary components of FIFRA requires the registration and labeling of all pesticides sold or distributed in the United States, ensuring that, if pesticides are used in accordance with the specifications on the label, they will not cause unreasonable adverse effects on humans or the environment. The final rule reiterates the VGP requirement that any registered pesticide must be used in accordance with its FIFRA label for all activities that result in a discharge into the waters of the United States or the waters of the contiguous zone. 40 CFR 139.4(b)(5)(iii). The final rule does not negate the requirements under FIFRA and its implementing regulations to use registered pesticides consistent with the product's labeling. In fact, the discharge of pesticides used in violation of certain FIFRA requirements incorporated into this rule is also a violation of these standards, and therefore a violation of the CWA (*e.g.,* exceeding hull coating application rates).

National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.* and Implementing Regulations Found at 15 CFR Part 922 and 50 CFR Part 404)

The National Marine Sanctuaries Act (NMSA) authorizes the designation and management of National Marine Sanctuaries to protect marine resources with conservation, education, historical, scientific, and other special qualities. Under NMSA, additional restrictions and requirements may be imposed on vessel operators that operate in and around National Marine Sanctuaries. Consistent with the VGP, the final rule establishes additional restrictions and requirements for certain discharges for vessels that operate in and around National Marine Sanctuaries as these areas are included in the definition of ''federally-protected waters'' in the final rule and listed in appendix A of part 139. Pursuant to CWA sections 312(p)(9)(B) and (E), discharge requirements established by regulations promulgated by the Secretary of Commerce under the National Marine Sanctuaries Act would continue to apply to waters under the control of the Secretary of Commerce (*e.g.,* National Marine Sanctuaries), in addition to the standards and requirements established in this final rule.

C. Environmental Impacts of Discharges for Which Technology-Based Discharge Standards Are Established by This Rule

While the VIDA requires EPA to establish technology-based standards, which do not consider the effects on receiving water quality (as discussed in greater detail in section VIII., *Final Federal Discharge Standards of Performance*), EPA is presenting to the public information about the following pollutants found in vessel discharges: ANS, nutrients, pathogens, oil and grease, metals, toxic and nonconventional pollutants with toxic effects, and other nonconventional and conventional pollutants. Information regarding water-quality impacts of these discharges and associated pollutants were not considered in the development of Federal standards of performance representing best available technology economically achievable, as established in this rule. EPA presents this information because the public may be interested in it and it informs the Economic Analysis that characterizes the potential benefits associated with this rule.

Discharges incidental to the normal operation of vessels can have significant adverse impacts on aquatic ecosystems and other potential impacts such as to human health through contamination of food from aquaculture/shellfish harvesting areas through the addition of pollutants. The adverse environmental impacts vary considerably based on the type and number of vessels, the size and location of the port or marina, and the condition of the receiving waters. These adverse impacts are more likely to occur when there are significant numbers of vessels operating in receiving waters with limited circulation or if the receiving waters are already impaired. As a result of this variation, protecting U.S. waters from vessel-related activities poses unique challenges for local, State, and Federal Governments.

1. Aquatic Nuisance Species (ANS)

ANS, which can include invasive plants, animals, and pathogens, are a persistent problem in U.S. coastal and inland waters. The VIDA specifically includes ANS in the category of nonconventional pollutants to be regulated through the application of best available technology and best practicable technology. 33 U.S.C. 1322(p)(4)(B)(i).

ANS may be incidentally discharged or released from a vessel's operations through a variety of vessel systems and equipment, including but not limited to ballast water, sediment from ballast tanks, vessel hulls and appendages, seawater piping, chain lockers, and anchor chains. ANS pose severe threats to aquatic ecosystems, including outcompeting native species, damaging habitat, changing food webs, and altering the chemical and physical aquatic environment. Furthermore, ANS can have profound and wide-ranging socioeconomic impacts, such as damage to recreational and commercial fisheries, infrastructure, and water-based recreation and tourism. Once established, it is extremely challenging and costly to remove ANS and remediate the impacts. It has become even more critical to control discharges of ANS from vessel systems and equipment with the increase in vessel traffic due to globalization and increased trade.

2. Nutrients

Nutrients, including nitrogen, phosphorus, and other micro-nutrients, are constituents of incidental discharges from vessels. Though often associated with discharges from sewage treatment facilities and other sources such as runoff from agricultural and urban stormwater sources, nutrients are also discharged from vessel sources such as runoff from deck cleaning, graywater, and bilgewater.

Increased nutrient discharges from anthropogenic sources are a major source of water quality degradation throughout the United States (U.S. Geological Survey, 1999). Generally, nutrient over-enrichment of waterbodies adversely impacts biological diversity, fisheries, and coral reef and seagrass ecosystems (National Research Council, 2000). One of the most notable effects of nutrient over-enrichment is the excess proliferation of plant life and ensuing eutrophication. A eutrophic system has reduced levels of dissolved oxygen and increased turbidity which can lead to changes in the composition of aquatic flora and fauna. Such conditions also fuel harmful algal blooms, which can have significant adverse impacts on human health as well as aquatic life (National Research Council, 2000; Woods Hole Oceanographic Institute, 2007).

3. Pathogens

Pathogens–those bacteria, viruses, and other microorganisms that can cause disease—can be found in discharges from vessels, particularly in graywater and ballast water discharges. Discharges of pathogens into waterbodies can adversely impact local ecosystems, fisheries, and human health. Pathogens found in untreated graywater are similar to, and in some cases may have a higher concentration than, domestic sewage entering land-based wastewater treatment plants (U.S. EPA, 2008; 2011d). Specific pathogens of concern found in graywater include *Salmonella* spp., *Escherichia coli,* enteroviruses, hepatitis, and pathogenic protists (National Research Council, 1993). Additional pathogen discharges have also been associated with ballasting operations, including *Escherichia coli,* intestinal enterococci, *Vibrio cholerae, Clostridium perfringens, Salmonella* spp., *Cryptosporidium* spp., *Giardia* spp., and a variety of viruses (Knight et al., 1999; Reynolds et al., 1999; Zo et al., 1999). Pathogens can potentially be transported in unfilled ballast water tanks (Johengen et al., 2005). Under the VIDA, bacterial and viral pathogens can qualify as ''aquatic nuisance species.'' 33 U.S.C. 1312(p)(1)(A), (Q), (R) (defining the related terms ''aquatic nuisance species,'' ''nonindigenous species,'' and ''organism'').

4. Oil and Grease

Vessels can discharge a variety of oils during normal operations, including lubricating oils, hydraulic oils, and vegetable or organic oils. A significant portion of the lubricants discharged from a vessel during these normal operations directly enters the aquatic environment. Some types of oil and grease can be highly toxic and carcinogenic, and have been shown to alter the immune system, reproductive abilities, and liver functions of many aquatic organisms (Ober, 2010). Broadly, the toxicity of oil and grease to aquatic life is due to reduced oxygen transport potential and an inability of organisms to metabolize and excrete oil and grease once ingested, absorbed, or inhaled.

The magnitude of impact of oils differs depending on the chemical composition, method of exposure, concentration, and environmental conditions (*e.g.,* weather, salinity, temperature). It can therefore be difficult to identify one single parameter responsible for negatively impacting aquatic life.

Aromatic hydrocarbon compounds, commonly present in fuels, lubricants, and additives, are consistently associated with acute toxicity and harmful effects in aquatic biota (Dupuis and Ucan-Marin, 2015). Impacts are observed in both developing and adult organisms, and include reduced growth, enlarged livers, fin erosion, reproduction impairment, and modifications to heartbeat and respiration rates (Dupuis and Ucan-Marin, 2015). Laboratory experiments have shown that fish embryos exposed to hydrocarbons exemplify symptoms collectively referred to as blue sac

disease. Symptoms of the disease range from reduced growth and spinal abnormalities, to hemorrhages and mortality (Dupuis and Ucan-Marin, 2015). Oils can also taint organisms that are consumed by humans, resulting in economic impacts to fisheries and potential human health effects.

In establishing the final rule, EPA considered the availability of environmentally acceptable lubricants (EALs). Production of EALs focuses on using chemicals with oxygen atoms which increases their water solubility and biodegradability, thereby decreasing their accumulation in the aquatic environment. The solubility of EALs also makes it easier for aquatic life to metabolize and excrete these chemicals (U.S. EPA, 2011). Overall, EALs reduce the bioaccumulation potential and toxic effects to aquatic life.

5. Metals

Vessel discharges can contain metal constituents from a variety of onboard sources, including graywater, bilgewater, exhaust gas emission control systems, and firemain systems. While some metals, including copper, nickel, and zinc, are known to be essential to organism function when present at certain levels, many others, including mercury, lead, thallium, and arsenic, are non-essential and/or are known to have only adverse impacts. Even essential metals may harm organism function in sufficiently elevated concentrations. Some metals may also bioaccumulate in the tissues of aquatic organisms, intensifying toxic effects. Through a process called biomagnification, concentrations of some metals can increase up the food chain, leading to elevated levels in commercially harvested fish species (U.S. EPA, 2007). Exposure to metals through fish consumption or other exposure pathways may have adverse human health effects (U.S. EPA, 2007). For example, exposure to elevated levels of methylmercury is associated with developmental and neurological effects, while exposure to lead is known to cause a range of health effects, from behavioral problems and learning disabilities to seizures and death (U.S. EPA, 2024 and 2024a). Additionally, ingestion of arsenic may lead to increased risk of cancer in the skin, liver, bladder, and lungs, as well as nausea, vomiting, abnormal heart rhythm, and damage to blood vessels (Agency for Toxic Substances and Disease Registry, 2007).

Vessel hulls and appendages are frequently coated in metal-based biocides to prevent biofouling. The most widely-used metal in biocides is copper. While it is an essential nutrient, copper can be both acutely and chronically toxic to fish, aquatic invertebrates, and aquatic plants at higher concentrations. Elevated concentrations of copper can adversely impact survivorship, growth, and reproduction of aquatic organisms (U.S. EPA, 2016). Copper can inhibit photosynthesis in plants and interfere with enzyme function in both plants and animals in concentrations as low as 4 micrograms (µg)/L (U.S. EPA, 2016).

6. Other Pollutants

Vessel discharges can contain a variety of other toxic, conventional, and nonconventional pollutants. This rule is intended to prevent and control the discharge of certain pollutants that have been identified in the various discharges. For example, graywater can contain phthalates phenols, and chlorine (U.S. EPA, 2008). These compounds can cause a variety of adverse impacts on aquatic organisms and human health. Phthalates are known to interfere with reproductive health, liver, and kidney function in both animals and humans. (Sekizawa et al., 2003; DiGangi et al., 2002). Chlorine can cause respiratory problems, hemorrhaging, and acute mortality to aquatic organisms, even at relatively low concentrations (U.S. EPA, 2008).

Vessel discharges may also contain certain biocides used in vessel coatings, which can be harmful to aquatic organisms. For example, cybutryne, also commonly known as Irgarol 1051, is a biocide that functions by inhibiting the electron transport mechanism in algae, thus inhibiting growth. Numerous studies indicate that cybutryne is both acutely and chronically toxic to a range of marine organisms, and in certain cases, more harmful than tributyltin (Carbery et al, 2006; Van Wezel and Van Vlaardingen, 2004).

Some vessel discharges are more acidic or basic than the receiving waters, which can have a localized effect on pH (Alaska Department of Environmental Conservation, 2007). For example, exhaust gas emission control systems remove sulfur dioxide in exhaust gas and dissolve it in washwater, where it is then ionized and produces an acidic washwater. Research has shown that even minor changes in ambient pH can have profound effects, such as developmental defects, reduced larval survivorship, and decreased calcification of corals and shellfish (Oyen et al., 1991; Zaniboni-Filho et al., 2009, Marubini and Atkinson, 1999).

IV. Scope of the Regulatory Action

A. Waters

The final rule applies to discharges into the waters of the United States or the waters of the contiguous zone. 33 U.S.C. 1322(p)(8)(B). Sections 502(7), 502(8), and 502(9) of the CWA define the terms ''navigable waters,'' ''territorial seas,'' and ''contiguous zone,'' respectively. 33 U.S.C. 1362(7)–(9). The term ''navigable waters'' means the waters of the United States including inland waters and the territorial seas, where the United States includes the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands. *Id.* (7). The term ''territorial seas'' means the belt of seas that extends three miles seaward from the line of ordinary low water along the portion of the coast in direct contact with the open sea and the line marking the seaward limit of inland waters. *Id.* (8). For simplicity, EPA uses the term ''shore'' to refer to the line of ordinary low water referenced in the foregoing definition for ''territorial seas.'' The term ''contiguous zone'' means the entire zone established or to be established by the United States under Article 24 of the Convention of the Territorial Sea and the Contiguous Zone, which extends 12 NM under Article 24 of the Convention of the Territorial Sea and the Contiguous Zone. *Id.* (9).

B. Vessels

The final rule applies to discharges incidental to the normal operation of any non-Armed Forces, non-recreational vessels as set forth in CWA section 312(p)(2). The final rule does not apply to discharges incidental to the normal operation of a vessel of the Armed Forces subject to CWA section 312(n); a recreational vessel subject to CWA section 312(o); a small vessel less than 79 feet in length or a fishing vessel, except that the rule applies to any discharge of ballast water from a small vessel less than 79 feet or fishing vessel; or a floating craft that is permanently moored to a pier, including a floating casino, hotel, restaurant, or bar. 33 U.S.C. 1322(p)(2)(B)(i). The types of vessels covered under the final rule include but are not limited to public vessels of the United States, commercial fishing vessels (for ballast water only), passenger vessels (*e.g.,* cruise ships and ferries), barges, tugs and tows, offshore supply vessels, mobile offshore drilling units, tankers, bulk carriers, cargo ships, container ships, and research vessels.

The domestic and international vessel population that is subject to the Federal standards of performance includes approximately 82,000 vessels. The final rule also does not apply to a narrow category of specified ballast water discharges that Congress believed do not pose a risk of spreading or introducing ANS (33 U.S.C. 1322(p)(2)(B)(ii); VIDA Senate Report, at 10), or to any discharges that result from (or contain material derived from) an activity other than the normal operation of a vessel (33 U.S.C. 1322(p)(2)(B)(iii)). Unless otherwise provided by CWA section 312(p), any incidental discharges excluded from regulation in the VIDA remain subject to the pre-enactment status quo (*e.g.,* State law, NPDES permitting, etc.). VIDA Senate Report, at 10.

The Federal standards of performance herein apply equally to new and existing vessels except in such cases where the final rule expressly distinguishes between such vessels, as authorized by CWA section 312(p)(4)(C)(ii).

C. Incidental Discharges

The final rule establishes general and specific Federal standards of performance for discharges incidental to the normal operation of a vessel described in CWA section 312(p)(2). The general standards apply to all vessels and all incidental discharges subject to regulation under CWA section 312(p). The specific standards apply to specific discharges incidental to the normal operation of the following types of vessel equipment and systems: ballast tanks, bilges, boilers, cathodic protection, chain lockers, decks, desalination and purification systems, elevator pits, exhaust gas emission control systems, fire protection equipment, gas turbines, graywater systems, hulls and associated niche areas, inert gas systems, motor gasoline and compensating systems, non-oily machinery, pools and spas, refrigerators and air conditioners, seawater piping, and sonar domes.

D. Emergency and Safety Concerns

The VIDA recognizes that safety of life at sea and other emergency situations not resulting from the negligence or malfeasance of the vessel owner, operator, master, or person in charge may arise, and that the prevention of loss of life or serious injury may require operations that would not otherwise be consistent with these standards. Therefore, no person would be found to be in violation of the final rule if they qualify for the affirmative defense described in CWA section 312(p)(8)(C).

E. Effective Date

The effective date of this rule is 30 days after publication in the **Federal Register**; however, the Federal standards of performance become effective beginning on the date upon which the regulations promulgated by the Secretary pursuant to CWA section 312(p)(5) governing the implementation, compliance, and enforcement of the Federal standards of performance become final, effective, and enforceable. Per CWA section 312(p)(3)(c), as of that date, the requirements of the VGP and all regulations promulgated by the Secretary pursuant to Section 1101 of the NANPCA (16 U.S.C. 4711) (as in effect on December 3, 2018), including the regulations contained in subparts C and D of 33 CFR part 151 and 46 CFR 162.060 (as in effect on December 3, 2018), shall be deemed repealed and have no force or effect. Similarly, as of that same date, any CWA section 401 certification requirement in Part 6 of the VGP, shall be deemed repealed and have no force or effect.

V. Stakeholder Engagement

During the development of the rule, EPA and the USCG engaged other Federal agencies, States, Tribes, non-governmental organizations, the general public, and the maritime industry. On October 26, 2020, EPA published a Notice of Proposed Rulemaking (''proposed rule,'' 85 FR 67818) in the **Federal Register** for public comment. Following publication of the proposed rule, EPA re-engaged with the states through the VIDA's Governors consultation process to discuss topics for which the states expressed an interest in further collaboration and conducted post-proposal outreach to States, Tribes, and interested stakeholders from environmental organizations and the regulated community to obtain additional clarification regarding their concerns with the proposed rule. Subsequently, on October 18, 2023, EPA published in the **Federal Register** a Supplemental Notice of Proposed Rulemaking (''supplemental notice,'' 88 FR 71788) for public comment that presented ballast water management system (BWMS) type-approval data that EPA received from the USCG since the proposed rule. The supplemental notice also included additional regulatory options that EPA was considering for discharges from ballast tanks, hulls and associated niche areas, and graywater systems. General summaries of the outreach are included in this section and in section XII., *Statutory and Executive Order Reviews.* Detailed documentation is also available in the docket.

A. Informational Webinars and Public Listening Sessions

EPA, in coordination with the USCG, hosted two informational webinars on May 7 and 15, 2019 to enhance public awareness about the VIDA and provide opportunity for engagement. During the webinars, EPA and the USCG provided a general overview of the VIDA, discussed interim and future discharge requirements, described future State and public engagement opportunities, and answered clarifying questions raised by the audience. The webinar recordings and presentation material are available at *https://www.epa.gov/vessels-marinas-and-ports/vessel-incidental-discharge-act-vida-engagement-opportunities.*

Additionally, EPA, in coordination with the USCG, hosted a public, in-person listening session at the U.S. Merchant Marine Academy in New York on May 29–30, 2019. At the listening session, EPA, with the support of the USCG, provided an overview of the VIDA, described the interim requirements and the framework for the future regulations, and conducted sessions on key vessel discharges to provide an opportunity for public input. Fifty-two individuals from a variety of stakeholder groups attended and provided input. Public input largely centered on BWMSs, including testing methods and monitoring requirements. Stakeholders requested harmonization of domestic regulations with those of the International Maritime Organization (IMO), such as standards for exhaust gas emission control systems. Input was also received on challenges with compliance and reporting under the VGP and the USCG ballast water regulations. The meeting agenda and a summary of the comments received are available in the docket.

During the public comment period for both the proposed rule and supplemental notice, EPA held public meetings to describe procedures for submitting comments on the rule and provide an opportunity for stakeholders to ask clarifying questions. Details and materials from these public meetings are available at *https://www.epa.gov/vessels-marinas-and-ports/vessel-incidental-discharge-act-vida-stakeholder-engagement-opportunities.*

B. Consultation and Coordination With States

1. Federalism Consultation and Governors Consultation

As noted in the proposed rule, EPA concluded that this action has

federalism implications pursuant to the terms of Executive Order 13132. As such, EPA consulted with State and local officials early in the development of this rule. On July 9, 2019, in Washington, DC, EPA and the USCG conducted a Federalism consultation briefing to allow states and local officials to have meaningful and timely input into EPA's rulemaking for the development of the Federal standards of performance. Additional information regarding the VIDA Federalism Consultation can be found in section XII. *Statutory and Executive Order Reviews.*

In addition, CWA section 312(p)(4)(A)(iii)(II) directs EPA to develop a process for soliciting input from interested Governors to inform the development of the Federal standards of performance, including sharing information relevant to the process. On July 10 and 18, 2019, EPA and the USCG, with the support and assistance of the National Governors Association, held meetings with Governors' representatives to provide an overview of the VIDA, discuss State authorities under the VIDA, and solicit input on a process that would meet both the statutory requirements and State needs. Based on this input, EPA developed a process to obtain Governors' input on the rulemaking. Thirteen states (Alaska, California, Hawaii, Maryland, Michigan, Minnesota, New York, North Carolina, Ohio, Puerto Rico, Virginia, Washington, and Wisconsin) participated in the process, as did representatives from the Western Governors Association, the Pacific States Marine Fisheries Commission, and the All Islands Coral Reef Committee.

To obtain Governors' input, EPA hosted three regional, web-based forums for Governors and their representatives to inform EPA early in the development of the proposed rule on the challenges and concerns associated with existing requirements under the VGP and to discuss potential considerations for key discharges of interest. The forums were held in 2019 on September 10 for West Coast states, September 12 for Great Lakes states, and September 19 for all states. During each forum, subject-matter experts from EPA provided a brief background on the VIDA followed by organized discussions regarding the key discharges identified by the regional representatives prior to the forum. During the organized discussions, interested Governors' representatives commented on the presentation content, shared applicable scientific or technical information, and provided suggestions for EPA to consider during the development of the Federal standards of performance. In addition to the verbal input provided during the forums, EPA accepted written comments. Copies of those written comments are included in the docket.

On December 18, 2019, EPA held two follow-up calls with representatives from the Great Lakes states. During each call, EPA addressed the comments that had been submitted by the Great Lakes states, including comments on specific requirements of the VIDA, non-ballast water discharges, and best available technology as it relates to BWMSs. Representatives from Illinois, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin attended the calls.

EPA also held a follow-up call with representatives from the West Coast states on January 15, 2020. During the call, EPA addressed the comments that had been submitted by West Coast states, including comments on outreach and engagement, the best available technology analysis for BWMSs, and regulation of biofouling and in-water cleaning and capture devices. Representatives from California, Hawaii, Oregon, and Washington, as well as representatives from the Pacific States Marine Fisheries Commission and the Western Governors Association, attended the call.

After the public comment period concluded for the proposed rule, EPA met with State representatives to discuss topics of interest between June and October 2021 to inform the supplemental notice.

During the engagement with states, EPA received pre-proposal comments, as well as post-proposal comments on the proposed rule and supplemental notice, from states, Governors, and Governors' representatives. Comments were received from representatives from Alabama, Alaska, American Samoa, California, the Commonwealth of the Northern Mariana Islands, Connecticut, Delaware, Florida, Guam, Hawaii, Illinois, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Puerto Rico, Rhode Island, U.S. Virgin Islands, Virginia, Washington, Wisconsin, and the Western Governors Association. Comments on the proposed rule primarily focused on ballast water, biofouling, and the State engagement process, while comments on the supplemental notice focused on EPA's analysis of newly obtained ballast water data and the additional regulatory options presented for ballast tanks, hulls and associated niche areas, and graywater systems. These comments can be found in the docket.

2. Governor Objections

In conjunction with the requirement to engage states in the development of the proposed standards, CWA section 312(p)(4)(A)(iii)(III) provides an avenue for Governors to formally object to a proposed Federal standard of performance. An interested Governor may submit to the Administrator a written, detailed objection to the proposed Federal standard of performance, describing the scientific, technical, and operational factors that form the basis of the objection. Before finalizing a Federal standard of performance for which there has been an objection from one or more interested Governors, the CWA requires the Administrator to provide a written response to the objection detailing the scientific, technical, or operational factors that form the basis for that standard.

EPA received five objection letters from the Governors of California, Hawaii, Michigan, Minnesota, and Washington. One or more of these states objected to aspects of the proposed Federal standard of performance for ballast tanks, biofouling management, chain lockers, decks, exhaust gas emission control systems, fire protection equipment, graywater systems, hulls and associated niche areas, and procedures for states to request changes to standards, regulations, or policy promulgated by the Administrator. In the objection letters, Governors also raised concerns outside of the scope of specific Federal standards of performance, such as the timing and substance of State consultation and purported inconsistency with State water quality standards. EPA addressed specific comments and concerns raised by these five states in the relevant topical sections of the Comment Response Document available in the docket. Consistent with the CWA, the Administrator responded to these Governors in writing prior to the publication of this final rule.

VI. Public Comments Received and Agency Responses

EPA received 28,701 comments on the proposed rule and 45,820 comments on the supplemental notice for a total of 74,521 comments received. Of these, 292 comments were unique, while the remaining comments were received from participants in mass mailer campaigns. The majority of comments addressed proposed requirements for specific discharges, though comments also contained feedback on general

topics of concern, such as stakeholder engagement. EPA fully considered comments and, where appropriate, made changes to the final rule to reflect comments received. The sections below describe those changes to the final rule and a comprehensive Comment Response Document is available in the docket.

VII. Definitions

The final rule includes definitions for several statutory, regulatory, and technical terms. 40 CFR 139.2. These definitions apply solely for the purposes of this final rule and do not affect the definitions of any similar terms used in any other context. Where possible, EPA relied on existing definitions from other laws, regulations, and the VGP to provide consistency with existing requirements. Many of the definitions are taken either verbatim or with minor clarifying edits from the VIDA, the legislation which this final rule implements. This includes definitions for: aquatic nuisance species (ANS), ballast water, ballast water exchange, ballast water management system (BWMS), Captain of the Port (COTP) Zone, commercial vessel—as that term is used for vessels operating within the Pacific Region, empty ballast tank, Great Lakes State, internal waters, live or living, marine pollution control device, organism, Pacific Region, port or place of destination, render nonviable, saltwater flush, Secretary, small vessel or fishing vessel (and the term ''fishing vessel'' to direct the reader to the definition of ''small vessel or fishing vessel''), and VGP.

EPA included definitions from other sections of the CWA, USCG regulations, the VGP, and other regulations, as well as new definitions specific to this final rule. EPA modified some of the definitions in the proposed rule based on public comments. Terms not defined in the final rule have the meaning defined under the CWA and applicable regulations.

Definitions for the following terms were added to provide clarity and ensure that the associated regulations are understood by the regulated community: active discharge of biofouling, anti-fouling coating, anti-fouling system, ferry, fire protection equipment, in-water cleaning with capture (IWCC), in-water cleaning without capture, macrofouling, marine inspector, microfouling, new ferry, passenger vessel, passive discharge of biofouling, and seawater piping system (*See* also the comment response sections for 40 CFR 139.21, *Graywater systems,* 40 CFR 139.22, *Hulls and associated niche areas,* 40 CFR 139.28, *Seawater piping,* and 40 CFR 139.19, *Fire protection equipment*). In response to public comments, the final rule slightly revises the definitions of ''macrofouling'' and ''microfouling'' from the definitions presented in the supplemental notice to provide additional clarity and consistency. It also dispenses with the use of the Navy Fouling Rating scale in favor of the terms macrofouling and microfouling (*See* also the comment response for 40 CFR 139.28, *Seawater piping).*

Several definitions were modified from the proposed rule. The definition for ''Marine Growth Prevention System (MGPS)'' now references the added definition for ''seawater piping system,'' while EPA modified the definition for ''niche areas'' to add clarity and remove language that would be confusing within the context of the VIDA (*See* also the comment response section for 40 CFR 139.22, *Hulls and associated niche areas*). In response to concerns raised by commenters, the definition for ''organism'' was modified to replace the word ''means'' with ''includes,'' consistent with the CWA definition. Definitions for ''oil-to-sea interface,'' ''EAL,'' and ''reception facility'' were modified slightly to provide additional clarity for the regulated community (*See* also the comment response section for 40 CFR 139.6, *Oil management*). ''Captain of the Port Zone'' now includes references to other United States Code for additional clarity and consistency (*See* also the comment response for Subpart A—Scope). The definition for ''midocean'' was modified slightly to maintain consistency within the final rule (*See* also the comment response section for 40 CFR 139.10, *Ballast tanks*). Finally, EPA removed the definition for ''scheduled drydocking'' as that term is not used in the final rule.

VIII. Final Federal Discharge Standards of Performance

In adopting CWA section 312(p)(4)(B)(i), Congress directed EPA to promulgate Federal standards of performance for conventional pollutants, toxic pollutants, and nonconventional pollutants (including ANS). The VIDA cross-references existing statutory standards in the CWA at sections 301 and 304 of the CWA (as well as EPA's implementing regulations at 40 CFR 125.3), which indicates that Congress intended for EPA to base the VIDA standards of performance on the same statutory considerations as those applicable when setting technology-based effluent limits for permits under CWA section 402.[4] The provisions cited in the VIDA (CWA sections 301(b) and 304, 33 U.S.C. 1311(b) and 1314), are the basis for EPA's development of effluent limitations guidelines, which are national performance-based requirements established by regulation for categories of point sources based on degree of control that can be achieved using various levels of pollution control technology, as specified in the CWA. Thus, many of the same legal standards and considerations that apply to the development of technology-based effluent limitation guidelines also apply to the development of the VIDA's Federal standards of performance.

The CWA and its legislative history of CWA sections 301(b) and 304(b) (33 U.S.C. 1311(b) and 1314(b)), describe the need to press toward higher levels of control through research and development of new processes, modifications, replacement of obsolete plants and processes, and other improvements in technology, taking into account the cost of controls to ''require elimination of pollutant discharges . . . if the Administrator finds, on the basis of information available to him, . . . that such elimination is technologically and economically achievable for a category or class of point sources as determined in accordance with regulations issued by the Administrator . . .''. 33 U.S.C. 1311(b)(2)(A). The legislative history and case law also support that EPA does not consider water quality impacts on individual water bodies as technology-based standards are developed (Statement of Senator Muskie, October 4, 1972, reprinted in *A Legislative History of the Water Pollution Control Act Amendments of 1972,* at 170. (U.S. Senate, Committee on Public Works, Serial No. 93–1, January 1973); *Southwestern Elec. Power Co.* v. *EPA,* 920 F.3d at 1005, ''The Administrator must require industry, regardless of a discharge's effect on water quality, to employ defined levels of technology to meet effluent limitations.'' (citations and internal quotations omitted).

The CWA establishes a two-step process for implementation of increasingly stringent technology-based effluent limitations. The first step requires compliance with standards based on''the application ofthe best practicable control technology currently available [BPT] as defined by the Administrator . . .'' 33 U.S.C. 1311(b)(1)(A). The second step requires

[4] *The VIDA does not reference CWA section 306 for new source standards, meaning that the CWA ''best available demonstrated control technology'' standard does not apply to new sources regulated by the VIDA.*

compliance with standards based on application of the ''best available technology economically achievable [BAT] for such category or class . . .'' 33 U.S.C. 1311(b)(2)(A). The CWA, as amended in 1977, replaced the BAT standard with a new standard, ''best conventional pollutant control technology [BCT],'' but only for certain ''conventional pollutants'' (*i.e.,* BOD, TSS, oil and grease, fecal coliform, and pH). *See* 33 U.S.C. 1311(b)(2)(E) and 1314(a)(4) and 40 CFR 401.16.

The CWA requires consideration of BPT for conventional, toxic, and nonconventional pollutants. CWA section 304(a)(4) designates the following as conventional pollutants: BOD, TSS, fecal coliform, and pH, and any additional pollutants defined by the Administrator as conventional. The Administrator designated oil and grease as an additional conventional pollutant on July 30, 1979. 40 CFR 401.16. Toxic pollutants (*e.g.,* toxic metals such as arsenic, mercury, selenium, and chromium; toxic organic pollutants such as benzene, benzo-a-pyrene, phenol, and naphthalene) are those outlined in CWA section 307(a) and subsequently identified in EPA regulations at 40 CFR 401.15 and 40 CFR part 423 appendix A. All other pollutants are nonconventional, including aquatic nuisance species. (33 U.S.C. 1322(p)(4)(B)(i)(III)).

In determining BPT, under CWA sections 301(b)(1)(A) and 304(b)(1)(B), and 40 CFR 125.3(d)(1), EPA evaluates several factors. EPA first considers the cost of application of currently available technology in relation to the effluent reduction benefits. Traditionally, as is consistent with the statute, its legislative history, and caselaw, EPA defines ''currently available'' based on the average of the best performance of facilities within the industry, grouped to reflect various ages, sizes, processes, or other common characteristics (*Chem. Mfrs. Assn.* v. *EPA,* 870 F.2d 177, 207–208 (5th Cir. 1989)). The Agency also considers the age of equipment and facilities, the processes employed, engineering aspects of various types of control techniques, process changes, non-water quality environmental impacts (including energy requirements), and such other factors as the Administrator deems appropriate. If, however, existing performance is uniformly inadequate within an industrial category, EPA may establish limitations based on higher levels of control if the Agency determines that the technology is available in another category or subcategory and can be practically applied to this industrial category.

The 1977 amendments to the CWA required EPA to identify effluent reduction levels for conventional pollutants associated with BCT for discharges from existing industrial point sources. 33 U.S.C. 1311(b)(2)(E); 1314(b)(4)(B); 40 CFR 125.3(d)(2). In addition to considering the other factors specified in CWA section 304(b)(4)(B) to establish BCT requirements, EPA also considers a two-part ''cost-reasonableness'' test. EPA explained its methodology for the development of BCT requirements in 1986. *See* 51 FR 24974, July 9, 1986.

For toxic pollutants and nonconventional pollutants, EPA promulgates discharge standards based on BAT. 33 U.S.C. 1311(b)(2)(A) and 1314(b)(2)(B); 40 CFR 125.3(d)(3). In establishing BAT, the technology must be technologically ''available'' and ''economically achievable.'' The factors considered in assessing BAT include the cost of achieving BAT effluent reductions, the age of equipment and facilities involved, the process employed, potential process changes, non-water quality environmental impacts, including energy requirements, and other such factors as the Administrator deems appropriate. EPA retains considerable discretion in assigning the weight accorded to these factors. *See Weyerhaeuser Co* v. *Costle,* 590 F.2d 1011, 1045 (D.C. Cir. 1978). EPA usually determines economic achievability on the basis of costs of compliance with BAT limitations on overall industry and subcategory financial conditions. BAT discharge standards may be based on effluent reductions attainable through changes in a facility's processes and operations. BAT reflects the highest performance in the industry and may reflect a higher level of performance than is currently being achieved based on technology transferred from a different subcategory or category. *Southwestern Elec. Power Co.* v. *EPA,* 920 F.3d at 1006; *Am. Paper Inst.* v. *Train,* 543 F.2d 328, 353 (D.C. Cir. 1976); *Am. Frozen Food Inst.* v. *Train,* 539 F.2d 107, 132 (D.C. Cir. 1976). BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice. *See American Frozen Foods,* 539 F.2d 107, 132, 140 (D.C. Cir. 1976).

CWA section 312(p)(4)(B)(ii) is also modelled off of established CWA concepts and directs EPA to use BMPs in certain circumstances. *See, e.g.,* VIDA Senate Report at 11 (''As with the technology standards themselves, this best management practice language is modeled off a similar regulatory provision for NPDES permits to ensure that the Administrator applies the same relevant considerations under section 312(p).''). Specifically, CWA section 312(p)(4)(B)(ii) requires employing BMPs to control or abate any discharge incidental to the normal operation of a vessel if: (1) numeric discharge standard standards are infeasible; or (2) or if the BMPs are reasonably necessary to achieve the standards or to carry out the purpose of reducing and eliminating the discharge of pollutants.

Where EPA did not impose a numeric standard,[5] EPA determined that they were infeasible. For these discharges, the particular challenges posed by setting standards for moving vessels at sea made numeric standards impracticable. For example, many of the specific discharge streams (*e.g.* chain lockers) would be impossible to monitor using available technology without putting the safety of crew members at risk. The physical nature of other discharge streams (*e.g.* deck runoff), which differs significantly from the normal contexts for which EPA normally imposes CWA numerical discharge standards, also makes setting a numeric standard impracticable. EPA also did not receive comments indicating that it was practicable to impose numeric standards for any specific discharges for which it required BMPs in the final rule. EPA received several comments supporting EPA's use of BMPs.

Additionally, EPA determined for certain discharges where it was practicable to impose numerical discharge standards that additional BMPs for these specific discharges are reasonably necessary to carry out the purpose and intent of CWA section 312(p).[6] For example, while EPA set numeric discharge standards for ballast tanks at 40 CFR 139.10(d), the Agency also required best management practices at 40 CFR 139.10(c) that are important for reducing discharges of ANS and thus are reasonably necessary to achieve the numeric discharge standards for ballast

[5] General operation and maintenance (section139.4), biofouling management (section 139.5), oil management (section 139.6), boilers (section 139.12), cathodic protection (section 139.13), chain lockers (section 139.14), decks (section 139.15), desalination and purification systems (section 139.16), elevator pits (section 139.17), fire protection equipment (section 139.19), gas turbines (section 139.20), hull and associated niche areas (section 139.22), inert gas systems (section 139.23), motor gasoline and compensating systems (section 139.24), non-oily machinery (section 139.25), refrigeration and air conditioning (section 139.27), seawater piping (section 139.28), sonar domes (section 139.29).

[6] Ballast tanks (section 139.10), bilges (139.11), exhaust gas emission control systems (section 139.18), graywater systems (section 139.21), pools and spas (section 139.26).

tanks. BMPs consist of specific and implementable practices that will drive the reduction of pollutant discharges from vessels. BMPs rely on existing available technologies and will lead to reductions in pollutant discharges even given the highly variable nature of incidental discharges from vessels and practical difficulties in monitoring those discharges. Additionally, requiring the BMPs for those same specific discharges that were subject to BMPs under the VGP is consistent with the VIDA's requirement that existing VGP requirements serve as a regulatory baseline.

CWA section 312(p)(4)(B) also establishes minimum requirements for the Federal standards of performance such that, ''the combination of any equipment or best management practice . . . shall not be less stringent than'' the effluent limits and related requirements established in Parts 2.1, 2.2, or 5 of the VGP. 33 U.S.C. 1322(p)(4)(B)(iii). Thus, while the CWA directs EPA to set the Federal standards of performance at the level of BPT/BCT/BAT, depending on the pollutant, it also creates a presumption that those standards would provide protection at least equivalent to the VGP requirements. There are exceptions at CWA section 312(p)(4)(D)(ii)(II) for situations where either new information becomes available that ''would have justified the application of a less-stringent standard'' or ''if the Administrator determines that a material technical mistake or misinterpretation of law occurred when promulgating the existing standard.'' Absent one of those exceptions, the statute directs that EPA ''shall not revise a standard of performance . . . to be less stringent than an applicable existing requirement.'' 33 U.S.C. 312(p)(4)(D)(ii)(I).

EPA endeavored to identify instances where the BPT/BCT/BAT level of control called for new, more stringent regulation than under the VGP for the VIDA Federal standards of performance. Where EPA research identified new alternatives or new options for marine pollution control devices, EPA evaluated those options as candidates for new BPT/BCT/BAT requirements. Where EPA identified no such new information or options, EPA continues to rely on the BPT/BCT/BAT analysis that led to the development of the VGP requirements. Additionally, EPA has considered in its BPT/BCT/BAT analysis that VGP requirements are currently in effect and are being achieved by regulated parties. This approach is consistent with EPA's obligations under CWA section 312(p)(4) because the effluent limits that EPA adopted in the VGP were already the product of a BPT/BCT/BAT analysis described in the permit fact sheets for both the 2008 and 2013 iterations of the VGP and corresponding supporting materials. CWA section 312(p)(4)(D)(ii) prohibits EPA from ''revis[ing] a standard of performance . . . to be less stringent than an applicable existing requirement'' except for the narrow exception identified in the previous paragraph. Absent such exception, the VIDA prohibits EPA from identifying a less stringent option as BPT/BCT/BAT. Indeed, by identifying the VGP as the minimum requirements for the Federal standards of performance and then expressly identifying the circumstances under which EPA could select a different, less stringent standard (*i.e.,* new information or error), the text and legislative history of the VIDA show that Congress intended to preserve, in most instances, the existing VGP requirements as a regulatory floor. VIDA Senate Report, at 12 (''The exceptions to this provision [for new information and technical or legal error] would provide the sole basis for the Administrator to weaken standards of performance compared to the legacy VGP requirements . . . .''). Moreover, Congress did not intend for EPA to depart from the considerations that informed the VGP's technology-based effluent limits. To the contrary, although the VIDA created a rule-based framework, rather than a permitting framework, Congress defined BPT, BCT, and BAT with ''intentional[ ] cross-reference[s]'' to terms used elsewhere in the CWA ''to ensure that the Administrator makes identical considerations when setting the standards of performance under CWA section 312(p) as the Administrator was previously required to do when setting technology-based effluent limits for permits'' as was done in the VGP. VIDA Senate Report, at 11.

While EPA is, for most of the discharges addressed in this rulemaking, relying on the BPT/BCT/BAT analysis that was performed to develop the VGP and the fact that certain discharge requirements are already currently in effect under the VGP, EPA did not incorporate the VGP requirements verbatim. In many cases, EPA translated the VGP discharge requirements into Federal standards of performance or otherwise improved the clarity to enhance implementation and enforceability. As such changes do not materially differ from the requirements established in the VGP, EPA reasonably relied on the BPT/BCT/BAT analysis that supported the VGP to develop the final Federal standards of performance.

In some instances, EPA updated language from the proposed rule to the final rule from ''including'' to ''including but not limited to'' to make absolutely clear that a list may be representative but not exhaustive and/or to ensure that language is not overly narrow or restrictive so as to preclude the use of new technologies or BMPs in the future that otherwise comply with the applicable requirements. As an example, 40 CFR 139.13(a) was updated to clarify that a vessel's cathodic corrosion protection device includes, but is not necessarily limited to, sacrificial anodes and impressed current cathodic protection systems. *See* 40 CFR 139.13(a) (''The requirements in paragraph (b) of this section apply to discharges resulting from a vessel's cathodic corrosion control protection device, including *but not limited to* sacrificial anodes and impressed current cathodic protection systems.'') (emphasis added). The final rule also uses the more commonly recognized abbreviation ''GT,'' rather than ''GT ITC'' as used in the proposed rule, to mean the same thing. This modification is intended to align the language with existing regulations and the IMO.

Additionally, EPA determined that two of the VGP-named discharges do not require specific discharge requirements beyond the general discharge requirements detailed in subpart B and special area requirements in subpart D. Discharges from motor gasoline and compensating systems and inert gas systems are discharges incidental to the normal operation of a vessel. However, EPA determined that the requirements outlined in the general discharge standards in subpart B for both discharges, and the special area requirements in subpart D for motor gasoline and compensating systems, constitute BAT and are at least as stringent as the VGP.

Many of the comments EPA received asserted that the proposed rule would not adequately protect water quality in a particular region or jurisdiction. Notwithstanding that the VIDA requires EPA's Federal standards of performance to carry forward certain VGP requirements, the VGP requirements and the VIDA Federal standards of performance are subject to different legal frameworks for considering water quality impacts. The VGP was an NPDES permit under which discharges had to meet both technology-based levels of control (*See* CWA sections 301(b) and 304(b), 33 U.S.C. 1311(b) and 1314(b)) and any more stringent controls as necessary to protect water quality

(*See* CWA section 301(b)(1)(C); 33 U.S.C. 1311(b)(1)(C)), as well as any requirements of a State certification under CWA section 401 (33 U.S.C. 1341). The VIDA, by contrast, directs EPA to establish the Federal standards of performance solely on a technology basis. This is evident from the VIDA's text, which references the CWA provisions governing technology-based rules and does not reference the CWA provisions calling for more stringent limitations to protect water quality or State certifications under CWA section 401. Additionally, the VIDA's text makes clear that EPA and authorized states may not issue NPDES permits to VIDA-regulated discharges, further indicating that NPDES permitting elements such as water quality-based effluent limitations and certifications under section 401 do not apply. *See* 33 U.S.C. 1322(p)(9)(C)(ii).

The VGP, like all CWA section 402 permits, needed to account for the potential impact of discharges on the quality of the receiving waters. The VGP did so in two ways, and neither are applicable to the VIDA Federal standards of performance. First, the CWA section 402 and NPDES regulations at 40 CFR 122.44(d) require permits to include more stringent water quality based effluent limits (WQBELs) when technology-based effluent limits (TBELs) are not sufficient to meet applicable water quality standards. The VGP included WQBELs at Part 2.3. Second, CWA section 401(d) allows States and Tribes to condition permits on ''any effluent limitations and other limitations, and monitoring requirements'' necessary to assure compliance with water quality requirements, including State water quality standards. Pursuant to this authority, the VGP included a number of specific requirements for individual states or Indian Country lands at Part 6. While the VIDA directed EPA to preserve certain VGP requirements (specifically, those at Parts 2.1, 2.2, and 5) in the Federal standards of performance, it did not preserve the WQBELs at Part 2.3 or the specific individual states' and Indian Country Lands' requirements at Part 6.

In contrast to permits issued under CWA section 402, technology-based effluent limitations developed under CWA sections 301(b) and 304(b) do not account for the quality of the receiving waters, including any water quality standards that may apply. *See Southwestern Elec. Power Co.* v. *EPA,* 920 F.3d 999, 1005 (5th Cir. 2019) (''The Act requires ELGs [developed under CWA section 304(b)] to be based on technological feasibility rather than on water quality'') (citing *E.I. du Pont de Nemours & Co.* v. *Train,* 430 U.S. 112, 130–31 (1977)); *See also Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1042 (D.C. Cir. 1978) (discussing Congress's decision in adopting the CWA to base national standards on technology rather than receiving water quality). Therefore, Congress intended EPA to establish the requirements of this regulation based on the performance of technologies without regard to effects on receiving water quality, after a consideration of the factors specified in CWA section 304(b), 33 U.S.C. 1314(b).

Rather than incorporate water quality-based considerations into the Federal standards of performance, Congress instead chose to have EPA, the USCG, and states address location-specific water quality impacts through different approaches. For example, CWA section 312(p)(4)(E) authorizes EPA, in concurrence with the USCG and in consultation with states, to ''require, by order, the use of an emergency best management practice for any region or category of vessels'' where such an order ''is necessary to reduce the reasonably foreseeable risk of introduction or establishment of an aquatic nuisance species'' or ''will mitigate the adverse effects of a discharge that contributes to a violation of a water quality [standard].'' Elsewhere in the statute, CWA section 312(p)(10)(D) creates a process to create geographically bound no-discharge zones to ''protect and enhance the quality of the specified waters.''

The final rule contains discharge standards that correspond to required levels of technology-based control (BPT, BCT, BAT) for discharges incidental to the normal operation of a vessel, as required by the CWA. In assessing the availability and achievability of the technologies discussed herein, in addition to the rationale for the VGP effluent limits, EPA considered studies and data from both domestic and international sources including studies and data from foreign-flagged vessels, as appropriate. As noted above, some discharge standards considered other existing laws and requirements (*e.g.,* Oil Pollution Act, APPS, and the Clean Hull Act). Where these laws already exist, EPA includes appropriate practices pursuant to these laws as part of the final standards to the extent these are demonstrated practices that EPA finds to be the best practicable control technology currently available (BPT) and best available technology economically achievable (BAT). For example, the final standards reaffirm requirements of the Clean Hull Act that coating on vessel hulls must not contain tributyltin or any other organotin compound used as a biocide.

A. Discharges Incidental to the Normal Operation of a Vessel—General Standards

This section describes the Federal standards of performance associated with the general discharge requirements in 40 CFR part 139, subpart B. These standards are designed to apply to all vessels and incidental discharges subject to the final rule to the extent the requirements are appropriate for each incidental discharge. These standards are proactive and preventative in nature and are designed to minimize the introduction of pollutants into the waters of the United States and the waters of the contiguous zone. The standards are based on EPA's analysis of available and relevant information, including available technical data, existing statutes and regulations, statistical industry information, and research studies included in the docket.

1. General Operation and Maintenance

The first category of Federal standards of performance are requirements associated with general operation and maintenance practices that are designed to eliminate or reduce the discharge of pollutants from vessels. 40 CFR 139.4. Unless otherwise noted, changes from the proposed rule are based on public comments EPA received on the proposed rule. The general operation and maintenance standards contain an overarching requirement that all discharges subject to this rule must be minimized. In a change from the proposed rule intended to provide greater clarity, the final rule specifies that a vessel operator must minimize discharges through management practices including, but not limited to, storage onboard the vessel, proper storage or transfer of materials, or reduced production of discharge. 40 CFR 139.4(b)(1). These requirements are ''best management practices'' (BMPs) under the CWA; which are defined under CWA section 312(p)(1)(H) as a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of the waters of the United States or the waters of the contiguous zone. Further, the term ''best management practice'' includes any treatment requirement, operating procedure, or practice to control vessel runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. According to the VIDA, the Administrator shall require the use of best management practices to control or abate any discharge if numeric

standards of performance are infeasible; or the best management practices are reasonably necessary to achieve the standards of performance; or to carry out the purpose and intent of this subsection. EPA determined that these BMPs are necessary because it is infeasible to identify a single numeric standard where: (1) operation and maintenance requirements usually are not expressed numerically; and (2) even if they could be expressed numerically, there is not a numeric operation and maintenance standard that would be appropriate to apply to the multitude vessels, discharge streams, and pollutants subject to the VIDA. *Id.* (p)(4)(B)(ii). The final rule defines the term ''minimize'' to mean ''to reduce or eliminate to the extent achievable using any control measure that is technologically available and economically practicable and achievable and supported by demonstrated BMPs such that compliance can be documented in shipboard logs and plans,'' which will be determined by the Secretary. Minimizing discharges provides a reasonable approach for vessels to reduce all the incidental discharges subject to this rule, including for discharges not subject to specific discharge standards. Minimization of some discharges, such as graywater, may be achieved through simple practices like reduced production, while other discharges, such as ballast water, may require more complex practices, such as saltwater flush or ballast water exchange. To further carry out the purpose and intent of the VIDA, the final rule at 40 CFR 139.4(b)(2) requires vessels to discharge while underway and as far from shore, as practicable. *Id.* (p)(4)(B)(ii).

The final general operation and management standards also limit the types and quantities of materials that a regulated vessel may discharge. 40 CFR 139.4(b)(3) prohibits the addition of any materials to a discharge, other than for treatment of the discharge, that is not incidental to the normal operation of the vessel. 40 CFR 139.4(b)(4) prohibits using dilution to meet any effluent discharge standards. While EPA recognizes some vessel systems use water permissibly under the rule, for example to generate chlorine for disinfection, such a practice may not be used as a means of dilution for purposes of meeting the discharge standard. 40 CFR 139.4(b)(5) specifies requirements for any materials used onboard that may subsequently be discharged (*e.g.,* disinfectants, cleaners, biocides, coatings, sacrificial anodes). The final rule specifies that materials used onboard that may subsequently be discharged must be used only in the amount necessary to perform its intended function, and also, in response to public comment, that materials must be used according to manufacturer specifications. 40 CFR 139.4(b)(5)(i). The final rule also prohibits the discharge of any material used onboard that will be subsequently discharged that contains any materials banned for use in the United States. 40 CFR 139.4(b)(5)(ii). For any pesticide products (*e.g.,* biocides, anti-microbials) subject to FIFRA registration, vessel operators must follow the FIFRA label for all activities that result in a discharge into the waters of the United States or the waters of the contiguous zone. 40 CFR 139.4(b)(5)(iii).

To prevent materials and associated pollutants from being washed overboard, the rule requires that vessel operators minimize any exposure of cargo or other onboard materials that may be inadvertently discharged by containerizing or covering materials. 40 CFR 139.4(b)(6). Several commenters requested clarification about the effect of this regulation on hopper barge operations and expressed concern about potential safety impacts. In a change from the proposed rule, the final rule at 40 CFR 139.4(b)(6) exempts hopper barges without a fixed cover or in circumstances when a vessel operator reasonably determines compliance with this requirement would interfere with essential vessel operations, negatively impact safety of the vessel, risk loss of life at sea, or violate any applicable regulations that establish specifications for safe transportation, handling, carriage, and storage of toxic or hazardous materials.

The presence or use of toxic or hazardous materials may be necessary for the operation of vessels. For purposes of the final rule, the term ''toxic or hazardous materials'' is defined at 40 CFR 139.2 to mean any toxic pollutant identified in 40 CFR 401.15 or any hazardous material as defined in 49 CFR 171.8. To minimize and prevent discharges of toxic or hazardous materials, the final rule requires toxic or hazardous material containers to be appropriately sealed, labeled, and secured, and located in an area of the vessel that minimizes exposure to ocean spray and precipitation consistent with vessel design, unless the master determines this would interfere with essential vessel operations or safety of the vessel or crew, or would violate any applicable regulations that establish specifications for safe transportation, handling, carriage, and storage of toxic or hazardous materials. 40 CFR 139.4(b)(7)(i). Also, to avoid discharges and prevent emergency or other dangerous situations, the final rule requires that containers holding toxic or hazardous materials not be overfilled and incompatible materials not be mixed. 40 CFR 139.4(b)(7)(ii). In response to confusion from a commenter, the final rule includes additional language not included in the proposed rule to clarify that incompatible materials are substances which, if mixed, will create hazards greater than that posed by the individual substances (*See* the comment response section for 40 CFR 139.4, *General operation and maintenance*). *Id.* Wastes should be managed in accordance with any applicable local, State, and Federal regulations, which are outside of the scope of this final rule. For example, the Resource Conservation and Recovery Act (RCRA) governs the generation, transportation, storage, and disposal of solid and hazardous wastes.

Like the requirements related to toxic and hazardous materials, the final standard at 40 CFR 139.4(b)(8) prohibits the discharge or disposal of containers holding toxic or hazardous materials. 40 CFR 139.4(b)(9) requires that vessel operators clean out compartments, including tanks, cargo, or other spaces, to meet the definition of ''broom clean'' or equivalent prior to washing such areas. Further, the final rule at 40 CFR 139.4(b)(10) requires vessel operators to maintain their topside surface (*i.e.,* exposed decks, hulls above waterline, tank, cargo, and related appurtenances) to minimize the discharge of cleaning compounds, paint chips, non-skid material fragments, and other materials associated with exterior topside surface preservation. 40 CFR 139.4(b)(11) requires that painting and coating techniques on topside surfaces minimize the discharge of paints, coatings, surface preparation materials, and similar substances, and 40 CFR 139.4(b)(12) prohibits the discharge of any unused paints and coatings.

The final general operation and maintenance requirement consolidates requirements from multiple sections of the VGP and specifies that any equipment that may release, drip, leak, or spill oil or oily mixtures, fuel, or other toxic or hazardous materials, including to the bilge, must be maintained regularly to minimize or eliminate the discharges. 40 CFR 139.4(b)(13).

2. Biofouling Management

Vessel biofouling is the accumulation of aquatic organisms such as plants,

animals, and microorganisms on vessel equipment or systems immersed in or exposed to the aquatic environment. Biofouling discharges include but are not limited to those from maintenance and cleaning activities of hulls, niche areas, and associated coatings. Biofouling can include pathogens, as well as microscopic fouling (''microfouling'') and macroscopic fouling (''macrofouling''). Microfouling is biofouling caused by bacteria, fungi, microalgae, protozoans, and other microscopic organisms that creates a biofilm, also called a slime layer. Microfouling is a precursor to macrofouling. Macrofouling is biofouling caused by the attachment and subsequent growth of visible plants and animals. Macrofouling includes large, distinct, multicellular individual or colonial organisms visible to the human eye, such as barnacles, tubeworms, mussels, fronds/filaments of algae, bryozoans, sea squirts, and other large attached, encrusting, or mobile organisms.

Biofouling on vessel equipment and systems is one of the main vectors for the introduction and spread of aquatic nuisance species (ANS) (Gollasch, 2002; Drake and Lodge, 2007; Hewitt et al., 2009; Hewitt and Campbell, 2010). Biofouling organisms are discharged from vessel surfaces both passively through sloughing and actively through in-water cleaning activities (*See* 40 CFR 139.2, definitions of ''passive discharge of biofouling'' and ''active discharge of biofouling''). Biofouling produces drag on a vessel hull and protruding niche areas, leading to greater fuel consumption and increased greenhouse gas emissions. It can also result in hull corrosion and blockage of internal seawater piping, such as the engine cooling and firemain systems, thereby degrading the integrity of the vessel structure and impeding safe operation.

In the proposed rule, EPA included requirements to reduce the discharge of biofouling organisms from vessel equipment and systems, notably from hulls and associated niche areas, by requiring vessel operators to develop and follow a biofouling management plan and follow specific in-water equipment and system cleaning protocols. Additionally, EPA proposed to prohibit in-water cleaning of biofouling on hulls and associated niche areas that exceed a U.S. Navy fouling rating (FR) of FR–20, except when the fouling is local in origin and cleaning does not result in the substantial removal of a biocidal anti-fouling coating, as indicated by a plume or cloud of paint; or, when an in-water cleaning and capture (IWCC) system is used that is designed and operated to capture coatings and biofouling organisms, filter biofouling organisms from the effluent, and minimize the release of biocides. EPA recommended, but did not propose to require, the use of IWCC systems for removal of local macrofouling.

Based on comments received during the public comment period for the proposed rule and subsequent meetings with interested States, Tribes, and other stakeholders held between August and November 2021, EPA published a supplemental notice that discussed additional regulatory options for discharges from hulls and associated niche areas. The supplemental notice discussed five key issues raised during the public comment period for the proposed rule regarding the general applicability of the hull and associated niche area requirements and cleaning of this equipment as proposed in 40 CFR 139.22(a) and (d). All comments were considered in preparation of the final rule.

EPA in the VGP considered discharges of biofouling organisms to be incidental when such discharges originate from vessel equipment and systems while the vessel is immersed in or exposed to the aquatic environment. Both the VGP and the discharge regulations promulgated pursuant to CWA section 312(n) for incidental discharges from vessels of the Armed Forces included management requirements to minimize the discharge of biofouling organisms from vessel equipment and systems. The VGP in Parts 2.2.23 and 4.1.3 required that vessel operators (1) minimize the transport of attached living organisms; and (2) conduct annual inspections of the vessel hull (including niche areas) for fouling organisms, respectively. Part 4.1.4 of the VGP also required vessel operators to prepare drydock inspection reports to demonstrate that the vessel hull and other surface and niche areas had been inspected for attached living organisms and that those organisms had been removed or neutralized. These reports were to be made available to EPA or an authorized representative of EPA upon request. Except in those circumstances specified in CWA section 312(p)(4)(D)(ii)(II), EPA's discharge regulations must be as stringent as those in the VGP. The final rule includes these requirements for the discharge of biofouling organisms from vessel equipment and systems.

Among the comments EPA considered were ones suggesting that biofouling should not be regulated as a discharge incidental to the normal operation of a vessel under the VIDA. However, EPA continues to interpret the statutory definition of ''discharge incidental to the normal operation of a vessel'' (''incidental discharge'') at CWA section 312(a)(12) to include discharges of biofouling organisms from vessel equipment and systems. As described in the proposed rule and supplemental notice, biofouling discharges are an ordinary accompanying circumstance of vessel operation and transit and thus fit the plain meaning of ''discharge incidental to the normal operation of a vessel.'' (85 FR 67818, October 26, 2020, section VIII.A.2 and 88 FR 71788, October 18, 2023, section IV.C.1). Additionally, the definition of ''discharge incidental to the normal operation of a vessel'' explicitly uses the word ''including,'' indicating that although ''biofouling'' is not specifically mentioned in the definition, the definition's list of discharges is illustrative and not exhaustive. 33 U.S.C. 1322(a)(12). Other enumerated terms within the definition also reasonably encompass biofouling. For example, ''any other pollutant discharge from the operation of a marine propulsion system, shipboard maneuvering system, crew habitability system, or installed major equipment. . .'' encompasses biofouling discharge from a vessel hull because the shipboard maneuvering systems cannot ''operate'' without the hull. *Id.* Additionally, ''a discharge in connection with the . . . maintenance[ ] and repair'' of any ''protective, preservative, or absorptive application to the hull'' could include biofouling discharge. *Id.* Finally, the statutory history and regulatory history support EPA's interpretation, particularly because the VGP regulated the same types of biofouling discharges as the final rule.

The final rule requires each vessel to develop a biofouling management plan to minimize the discharge of biofouling organisms, thereby minimizing the potential for the introduction and spread of ANS. 40 CFR 139.5(b). The requirement to develop a biofouling management plan is intended to provide a holistic strategy that considers the operational profile of the vessel, identifies the appropriate anti-fouling systems, and details the biofouling management practices for specific areas of the vessel. The details of the plan would fall under the USCG's implementing regulations established under CWA section 312(p)(5), although the plan elements must prioritize procedures and strategies to prevent macrofouling.

While the VGP did not explicitly require a biofouling management plan,

it required the majority of the components that EPA expects will comprise a biofouling management plan individually, such as: (1) the consideration of vessel class, operations, and biocide release rates and components in the selection of anti-fouling systems; (2) an annual inspection of the vessel hull and niche areas for assessment of biofouling organisms and condition of anti-fouling paint; (3) a drydock inspection report noting that the vessel hull and niche areas have been inspected for biofouling organisms and those organisms have been removed or neutralized; (4) reporting of cleaning schedules and methods; and (5) appropriate disposal of wastes generated during cleaning operations. Additionally, per the Clean Hull Act of 2009, every vessel engaging in one or more international voyages is required to carry an anti-fouling system certificate that contains the details of the anti-fouling system (*See* 33 U.S.C. 3821). Moreover, under regulations promulgated under the authority of the National Invasive Species Act, the USCG has required the individual in charge of any vessel equipped with ballast water tanks that operates in the waters of the United States to maintain a ballast water management plan that has been developed specifically for the vessel and that will allow those responsible for the plan's implementation to understand the vessel's ballast water management strategy and comply with the requirements. 33 CFR 151.2050. That ballast water management plan is to include detailed biofouling maintenance and sediment removal procedures (33 CFR 151.2050(g)(3)). Consistent with guidance issued by the USCG on those regulations, these procedures were to be incorporated into the ballast water management plan or included as separate Biofouling Management and Sediment Management Plans and referenced in the ballast water management plan (USCG, 2014). Under this guidance, the USCG advised that IMO Resolution Marine Environment Protection Committee (MEPC) 207(62) provides effective guidance for developing and implementing a vessel-specific biofouling management plan.

Developing vessel-specific biofouling management plans is important because vessels can vary widely in operational profile and, therefore, in the extent and type of biofouling. However, the final rule recognizes that vessels with similar operational profiles, such as vessels that cross the same waterbodies, travel at similar speeds, and share the same design, may also employ the same management measures, such as selecting the same types of anti-fouling systems and applying the same inspection and cleaning schedules. It is anticipated that fleet owners may develop a biofouling management plan template that can be readily adapted into a vessel-specific biofouling management plan. To address comments received on the proposed rule, the final rule clarifies that a biofouling management plan must be developed to minimize the discharge of biofouling organisms, prioritize procedures and strategies to prevent macrofouling (thereby minimizing the potential for the introduction and spread of ANS), and describe the vessel-specific anti-fouling systems and biofouling management practices necessary to comply with requirements in 40 CFR 139.5. The USCG, through its regulations developed under CWA section 312(p)(5), has the authority to specify the details of the plan, including how vessel operators are to implement and follow that plan. The final rule also references 40 CFR 139.13 (cathodic protection), 139.14 (chain lockers), 139.22 (hulls and associated niche areas), 139.28 (seawater piping), and 139.29 (sonar domes) for additional biofouling management requirements.

3. Oil Management

The final rule aims to minimize discharges of oil, including oily mixtures, and requires vessel operators to use control and response measures to prevent, minimize, and contain spills and overflows during fueling, maintenance, and other vessel operations. 40 CFR 139.6(d). This reinforces existing requirements found at 33 CFR part 155 that require taking immediate and appropriate corrective actions if an oil spill is observed because of vessel operations, including maintaining appropriate spill containment and cleanup materials onboard and immediately using such materials in the event of any spill.

Also, the final rule specifies that the discharge of used or spent oil no longer being used for its intended purpose is prohibited. 40 CFR 139.6(b). This includes any used or spent oil that may be added to an incidental discharge that is otherwise authorized to be discharged. Overall, this section authorizes discharges of small amounts of oil, including oily mixtures, incidental to the normal operation of a vessel provided such discharges comply with the otherwise applicable existing legal requirements. For example, consistent with the CWA, this standard prohibits the discharge of oil in such quantities as may be harmful, as defined in 40 CFR 110.3. *See* 40 CFR 139.6(c) (prohibiting discharges in quantities that may be harmful) and 139.2 (defining ''Discharge of oil in such quantities as may be harmful'' by reference to 40 CFR 110.3 and 110.5).

The final rule at 40 CFR 139.3 specifies that, except as expressly provided, nothing in this part affects the applicability of any other provision of Federal law as specified in several statutory and regulatory citations. 40 CFR 139.3 includes citations for CWA section 311 and the Act to Prevent Pollution from Ships (APPS) (33 U.S.C. 1901 *et seq.*), both of which address discharges of oil. Under CWA section 311, any oil, including oily mixtures, other than those exempted in 40 CFR 110.5, may not be discharged in such quantities as ''may be harmful,'' which is defined to include those discharges that violate applicable water quality standards or ''cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.'' Discharges that are not included in the description of ''may be harmful'' include discharges of oil from a properly functioning vessel engine (including an engine on a public vessel) and any discharges of such oil accumulated in the bilges of a vessel discharged in compliance with 33 CFR part 151 subpart A; other discharges of oil permitted under MARPOL 73/78, Annex I, as provided in 33 CFR part 151 subpart A; and any discharge of oil explicitly permitted by the Administrator in connection with research, demonstration projects, or studies relating to the prevention, control, or abatement of oil pollution. The United States enacted the APPS to implement the nation's obligations under MARPOL 73/78. As the lead agency for APPS implementation, the USCG issued implementing regulations primarily found at 33 CFR part 151. Those APPS requirements already apply to many of the vessels that are covered by this rule. Among other things, the APPS regulates the discharge of oil and oily mixtures. Generally, these requirements prohibit ''any discharge of oil or oily mixtures into the sea from a ship'' except when certain conditions are met, including a discharge with an oil content of less than 15 ppm and that the ship operates oily-water separating equipment, an oil content monitor, a bilge alarm, or a combination thereof.

The final rule also includes requirements for oil-to-sea interfaces. Specifically, the final rule requires the use of environmentally acceptable lubricants (EALs) for oil-to-sea

interfaces unless technically infeasible. 40 CFR 139.6(e). The final standard for general operation and maintenance at 40 CFR 139.4 also identifies a series of mandatory BMPs for minimizing lubricant discharges during maintenance.

Oil-to-sea interfaces are defined as seals or surfaces on shipboard equipment where the design is such that small quantities of oil can escape into the surrounding waters during normal vessel operations. *See* 40 CFR 139.2. For example, below-water seals frequently use lubricating oil mechanisms that maintain higher pressure than the surrounding sea to ensure that no seawater enters the system and compromises the unit's performance. Above-deck equipment with portions of the machinery extended overboard, or equipment mounted to the exterior hull of the vessel, may also have oil-to-sea interfaces. During normal operation, small quantities of lubricant oil in these interfaces are discharged directly into surrounding waters. Constituents of conventional hydraulic and lubricating oils vary by manufacturer, but may include copper, tin, aluminum, nickel, and lead. In addition, traditional mineral oils have a low biodegradation rate, a high potential for bioaccumulation, and a measurable toxicity towards marine organisms.

Vessels use lubricants in a wide variety of shipboard applications. Examples of lubricated equipment with oil-to-sea interfaces include:

- *Stern tube:* A stern tube is the casing or hole through the hull of the vessel that enables the propeller shaft to connect the vessel's engine to the propeller on the exterior of the vessel. Stern tubes contain seals designed to keep the stern tube lubricant from exiting the equipment array and being discharged to waters at the exterior of the vessel's hull.
- *Controllable pitch propeller:* Variably pitched propeller blades are for changing the speed or direction of a vessel and supplementing the main propulsion system. Controllable pitch propellers also contain seals that prevent the lubricant from exiting the equipment array.
- *Rudder bearings:* These bearings allow a vessel's rudder to turn freely; they also use seals with an oil-to-sea interface.
- *Lubricated deck equipment above the water surface line that extends overboard:* Hose handling cranes, hydraulic system provision handling cranes, hydraulic cranes, and hydraulic stern ramps are examples of machinery with the potential for above-water discharges of lubricants. When vessels are underway, this equipment is often not operational, and any lubricant losses are typically captured during deck washdown and treated as part of deck washdown wastewater. However, discharges can occur when portions of the machinery such as booms or jibs, trolleys, cables, hoist gear, or derrick arms are in use and extend over the side of vessel.
- Lubricated equipment, such as accommodation ladders, mounted to the exterior of the vessel hull.

In the case of controllable pitch propellers (CPP), up to 20 ounces of hydraulic and lubricating oils could be released for every CPP blade that is replaced, with blade replacement occurring at drydock intervals or when the blade is damaged. When the blade replacement includes removal of the blade port cover (generally occurring infrequently, less than once per month), up to five gallons of oil could be discharged into surrounding waters unless the service is performed in drydock. Additionally, many oceangoing vessels operate with oil-lubricated stern tubes. Oil leakage from stern tubes, once considered a part of normal ''operational consumption'' of oil, has become an issue of global concern and is now treated as oil pollution. A 2001 study commissioned by the European Commission DG Joint Research Centre concluded that routine unauthorized operational discharges of oil from ships into the Mediterranean Sea created more pollution than accidental spills (Pavlakis et al., 2001). Similarly, an analysis of data on oil consumption sourced from a lubricant supplier indicated that daily stern tube lubricant consumption rates for different vessels could range up to 20 liters per day (Etkin, 2010). This analysis estimated that operational discharges (including stern tube leakage) from vessels add between 36.9 million liters and 61 million liters of lubricating oil into marine port waters annually.

One commenter requested that EPA restore language from the VGP recommending use of seawater-based systems for stern tube lubrication to eliminate the discharge of oil from these interfaces to the aquatic environment. EPA agrees, and the Agency has added this VGP language back into the text of the final standard. *See* 40 CFR 139.6(e) (''Operators of new build vessels should endeavor to use seawater-based systems for stern tube lubrication to eliminate the discharge of oil from these interfaces to the aquatic environment.'')

The final rule at 40 CFR 139.2 defines an EAL as a lubricant or hydraulic fluid, including any oil or grease, that is ''biodegradable,'' ''minimally-toxic,'' and ''not bioaccumulative.'' The addition of ''or hydraulic fluid'' to the definition clarifies, consistent with VGP implementation, that any hydraulic fluid containing oils or greases and used in equipment with an oil-to-sea interface requires use of an EAL, unless technically infeasible. Based on several comments received regarding oil-to-sea interfaces on deck equipment, EPA reexamined the definition for ''oil-to-sea interface'' at 40 CFR 139.2 and updated it to clarify that oil-to-sea interfaces are found on equipment subject to immersion as well as equipment above the surface line that extends overboard or is mounted to the exterior of the hull. This modification is in line with EPA's regulation of those portions of vessel deck equipment from which lubricant or hydraulic fluid losses cannot otherwise be managed onboard the vessel.

More than 16 manufacturers have produced EALs for the global shipping community, providing vessel operators with a wide array of choices for optimizing lubricant technical performance. Most major marine equipment manufacturers have approved EALs for use in their machinery, and new equipment, such as air seals, is being introduced and refined commercially to minimize or eliminate the need for EALs. The market for EALs continues to expand around the world, particularly in Europe where the use of such lubricants is promoted through a combination of tax breaks, purchasing subsidies, and national and international labeling programs. Thus, EAL's are widely available to vessels in the marketplace and their use. And while vessels must incur additional costs to purchase EALs, EPA has analyzed those costs in its Economic Analysis and finds them to be economically achievable. The Agency has thus determined that product substitution of EALs for other lubricants in oil-to-sea applications (unless technically infeasible), together with the required BMPs for maintenance, represents BAT for discharges from oil-to-sea interfaces. Use of EALs in lieu of conventional formulations for oil-to-sea interfaces can offer significantly reduced discharges of pollutants of concern (U.S. EPA, 2011).

As part of the BAT analysis for the VGP, EPA considered the processes employed and potential process changes that might be necessary for vessels to use EALs. As EPA explained at the time, EALs are readily available, and their use is economically achievable for applications where it is technologically available (U.S. EPA, 2011). The 40 CFR 139.6(e) requirement carries forward

EPA's VGP approach based on BAT that numeric standards of performance for discharges from oil-to-sea interfaces are infeasible but that EALs are technologically available, economically achievable, and reasonably necessary to carry out the purpose and intent of this subsection. New vessels can select equipment during design and construction that is compatible with EALs. Furthermore, vessel operators can design additional onboard storage capacity for EALs if they choose to use traditional mineral-based oil for engine lubrication (thereby needing two types of oils on-hand). The extra storage capacity needed would be minor. However, EPA considers the use of EALs in some applications to not be technologically practicable or achievable, such as for when there is existing equipment for which no compatible products are currently available. Therefore, the final rule at 40 CFR 139.6(e) retains the caveat from the VGP that EALs must be used in oil-to-sea interfaces except when ''technically infeasible.''

The Agency considered several other approaches for regulating oil-to-sea interfaces. For one, the most recent version of the European Ecolabel program has a modified definition of what constitutes an EAL in that it now allows for ''small quantities'' (*i.e.,* <0.1 percent) of bioaccumulative substances in lubricant formulations. EPA considered revising the definition of ''biodegradable'' at 40 CFR 139.2 to more closely align the terminology with current European Ecolabel requirements for achieving specific levels of degradation within 10, rather than 28, days. EPA notes that stakeholders involved in the European Ecolabel program felt strongly that this change in the test pass window would significantly reduce the number of lubricant formulations available on the market. To ensure widespread installation and use of EALs by vessels that operate in the waters of the United States or the waters of the contiguous zone, EPA in 40 CFR 139.2 retained the definition of ''biodegradable'' as used in the VGP.

The final standard for oil-to-sea interfaces includes EAL requirements as part of a general standard for oil management applicable to any specific discharge that may have an oil-to-sea interface rather than a specific discharge standard. *See* 40 CFR 139.6(e). Further, the standard covers all oil-to-sea interfaces on vessels rather than specifically identified interfaces. *Id.* EPA notes that certain types of seals used on below-deck equipment, such as air seals, are based on designs that use an air gap or other mechanical features to prevent oils from reaching waters at the exterior of the vessel's hull. If these seals do not allow the lubricant to be released under normal circumstances, they are not considered to be oil-to-sea interfaces. *See* 40 CFR 139.2 (an ''oil-to-sea interface'' has a ''*design* [ ] such that oil or oily mixtures can escape directly into surrounding waters'') (emphasis added). Determinations of technical infeasibility regarding the use of an EAL pertain to implementation and therefore would fall under the USCG's implementing regulations established under CWA section 312(p)(5). The scope of this discharge category extends to all types of equipment with direct oil-to-sea interfaces, including any equipment on-deck or mounted to the exterior of the vessel hull. *See* 40 CFR 139.2 (definition of ''oil-to-sea interface''). While the VGP provided that a lubricant could be classified as an EAL if it was either ''biodegradable,'' ''minimally-toxic,'' and ''not bioaccumulative'' or labeled under a defined list of labeling programs (*e.g.,* the European Union's European Ecolabel and Germany's Blue Angel), the final rule does not include a list of acceptable labeling programs. This is because neither EPA nor the USCG can control future modifications to the criteria by these organizations. EPA expects that all or most of the labeling programs identified in the VGP will meet the EAL criteria in this final rule and subsequent USCG implementing regulations, such that a comparable selection of appropriate lubricants will be available to vessel operators.

B. Discharges Incidental to the Normal Operation of a Vessel—Specific Standards

This section describes the final specific Federal standards of performance for discharges incidental to the normal operation of a regulated vessel. The final Federal standards of performance apply to regulated vessels operating within the waters of the United States or the waters of the contiguous zone. The final rule requires that a discharge comprised of two or more regulated incidental discharges must meet the Federal standards of performance established for each of those commingled discharges.

1. Ballast Tanks

a. Background and Applicability

The final rule incorporates the CWA section 312(p)(1) definition of ''ballast water'' to mean any water, suspended matter, and other materials taken onboard a vessel to control or maintain trim, draft, stability, or stresses of the vessel, regardless of how any such water or suspended matter is carried; or taken onboard a vessel during the cleaning, maintenance, or other operation of a ballast tank or ballast management system of the vessel. 40 CFR 139.2. This statutory definition is slightly expanded and clarified from the VGP, which included the USCG definition of the term, meaning any water and suspended matter taken on board a vessel to control or maintain, trim, draught, stability, or stresses of the vessel, regardless of how it is carried. VGP appendix A; 33 CFR 151.1504. The term ''ballast water'' does not include any substance that is added to the water that is directly related to the operation of a properly functioning ballast water management system (BWMS). In response to several commenters, EPA is clarifying here that the definition of ''ballast water'' does not include discharges of fresh water, sea water, or ice carried onboard a vessel for food safety and product quality purposes and as such are not subject to the ballast water requirements in the final rule. The final rule carries forward the definition of ''ballast tank'' from the appendix A of the VGP to mean any tank or hold on a vessel used for carrying ballast water, regardless of whether the tank or hold was designed for that purpose. 40 CFR 139.2.

Ballast water discharge volumes and rates vary significantly by vessel type, ballast tank capacity, and type of deballasting equipment for the universe of vessels covered under the rule. Most passenger vessels have ballast capacities of less than 5,000 cubic meters (approximately 1.3 million gallons) of water. Cargo/container ships generally have ballast capacities of five to 20 thousand cubic meters (more than 1.3 to 5.3 million gallons) of water while some bulk carriers and tankers have ballast capacities greater than 40 thousand cubic meters (over 10 million gallons) of water.

Ballast water may contain toxic and nonconventional pollutants such as rust inhibitors, epoxy coating materials, zinc or aluminum (from anodes), iron, nickel, copper, bronze, silver, and other material or sediment from inside the tanks, pipes, or other machinery. Ballast water may also contain organisms that originate from where the water is collected. When ballast water is discharged, these organisms may establish new populations of ANS in the receiving waterbodies. Ballast water discharged from vessels has been, and continues to be, a significant environmental concern because it can introduce and spread ANS that threaten the diversity and abundance of native species; the ecological stability of U.S.

waters; and the commercial, agricultural, aquacultural, and recreational use of those waters.

Prior to passage of the VIDA, ballast water discharges were regulated by multiple Federal and State laws and regulations. The USCG regulated ballast water discharges under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), and amendments thereto by the National Invasive Species Act (NISA) of 1996 (33 CFR part 151 subparts C and D). EPA regulated ballast water discharges under the VGP through the NPDES program authorized under CWA section 402. However, the VIDA established that ballast water will now be regulated as an incidental discharge under a new CWA section 312(p). The VIDA set as a presumptive minimum baseline the existing VGP requirements.

Additionally, several states (California, Michigan, Minnesota, Ohio, Oregon, Washington, and Wisconsin) previously used their certification authorities under CWA section 401 or under standalone State authorities to impose additional, State-specific requirements on commercial vessels operating within their State waters. The existing USCG and EPA requirements for ballast water, as well as such additional standalone State standards, will no longer apply once EPA has established national standards and the USCG has promulgated implementing regulations that are final, effective, and enforceable under the VIDA. 33 U.S.C. 1322(p)(9)(A)(i).

The final standards for ballast water reflect BAT considering the specified statutory factors for BAT under CWA section 304(b), as well as the previous requirements established in the VGP and 33 CFR part 151 subparts C and D, and the new requirements established in the VIDA.

b. Exclusions

The final standards for ballast water apply to any vessel equipped with one or more ballast tanks that operates in the waters of the United States or waters of the contiguous zone, except as excluded by statute or regulation. Pursuant to CWA section 312(p)(2)(B)(ii), the final rule excludes ballast water discharges from the following five vessel categories from the CWA section 312(p) ballast water standards: (1) vessels that continuously take on and discharge ballast water in a flow-through system; (2) vessels in the National Defense Reserve Fleet scheduled for disposal; (3) vessels discharging ballast water consisting solely of water taken onboard from a public or commercial source that, at the time the water is taken onboard, meets the Safe Drinking Water Act requirements; (4) vessels carrying all permanent ballast water in sealed tanks; and (5) vessels discharging ballast water into a reception facility. 40 CFR 139.10(b).

i. Vessels That Continuously Take on and Discharge Ballast Water in a Flow-Through System

The final rule excludes discharges of ballast water from a vessel that continuously takes on and discharges ballast water in a flow-through system, if the Administrator determines that the system cannot materially contribute to the spread or introduction of an ANS from ballast water into waters of the United States or the contiguous zone (40 CFR 139.10(b)(1)), acknowledging that such a flow-through system may have additional areas on the hull (*e.g.,* niches) requiring more rigorous biofouling management. EPA is unaware of any such vessels currently in commercial operation, but theoretically a vessel could be designed to have ambient water flow through the hull for vessel stability without retaining any of that water in such a way that it would be transported. Should any such vessel begin commercial operation, EPA expects that it would evaluate the ballasting configuration to determine if the vessel meets the statutory description, in which case it would be excluded from the ballast water discharge standards. In that instance, the Administrator would notify the vessel owner/operator of such a determination. 40 CFR 139.10(b)(1); 33 U.S.C. 1322(p)(2)(B)(ii)(I).

ii. Vessels in the National Defense Reserve Fleet Scheduled for Disposal

The final rule excludes discharges of ballast water from a vessel in the National Defense Reserve Fleet[7] that is scheduled for disposal if the vessel does not have an operable BWMS. 40 CFR 139.10(b)(2); 33 U.S.C. 1322(p)(2)(B)(ii)(II).

iii. Vessels Discharging Ballast Water Consisting Solely of Water Meeting the Safe Drinking Water Act Requirements

The final rule excludes discharges of ballast water from a vessel that consist solely of water taken onboard from a public or commercial source that, at the time the water is taken onboard, meets the applicable requirements of the Safe Drinking Water Act (SDWA) (42 U.S.C. 300f *et seq.*) at 40 CFR parts 141 and 143. 40 CFR 139.10(b)(3); 33 U.S.C. 1322(p)(2)(B)(ii)(III). In plain terms, this means that vessels may use and discharge finished, potable water as ballast, but may not use or discharge untreated water from a public water system that is not necessarily potable.

The exclusion in final rule, unlike the proposed exclusion, does not categorically apply to water taken onboard that meets Health Canada's Guidelines for Canadian Drinking Water Quality because EPA determined that the implementation details of this Congressionally-mandated exclusion, such as identification of potable water sources consistent with SDWA regulations, may be more appropriately left to the USCG as part of its implementation, compliance, and enforcement requirements under CWA section 312(p)(5). EPA does not have information suggesting vessels made use of a comparable allowance present in the VGP for water meeting Health Canada's Guidelines, and the USCG ballast water regulations in 33 CFR part 151 did not provide for a comparable allowance. Thus, prior to the VIDA, this allowance for water meeting Health Canada's Guidelines applied solely to the universe of vessels regulated under the VGP but not USCG regulations (namely, vessels operating on the Great Lakes). However, an industry representative for U.S.-flagged vessels operating on the Great Lakes commented on the proposed rule that it is not operationally or economically feasible for a U.S.-flagged vessel to receive water meeting potable water requirements. Thus, while the intent of EPA's proposed rule was to retain the expanded exclusion from the VGP to include potable water used as ballast that meets Health Canada's Guidelines, the final rule does not include such expansion to more closely align with the statutory language and consistent with information in a comment EPA received demonstrating that the requirement would not be technologically available and economically achievable. EPA acknowledges that vessels discharging ballast water consisting solely of water taken onboard from public or commercial water sources may be deemed to be consistent with applicable requirements of the SDWA and that the USCG may establish procedures for use of such water as a means to comply with the ballast water discharge standard. EPA anticipates that USCG may address this issue as a matter of implementation, compliance, and enforcement in its corresponding rulemaking under the VIDA.

[7] This includes a fleet of vessels, established by section 11 of the Merchant Ship Sales Act of 1946, reserved for national defense and national emergencies.

iv. Vessels Carrying All Permanent Ballast Water in Sealed Tanks

The final rule excludes discharges of ballast water from a vessel that carries all permanent ballast water in sealed tanks that are not subject to discharge. 40 CFR 139.10(b)(4). The final rule did not carry through the phrase ''except under emergency circumstances'' from the proposed rule in recognition that 40 CFR 139.1(b)(3) excludes discharges from VIDA regulation if compliance with this part would compromise the safety of life at sea. This 40 CFR 139.1(b)(3) exclusion would cover discharges of ballast water from a sealed tank in emergency circumstances. As such, clarification about emergency circumstances specific to discharges from sealed tanks is duplicative and unnecessary. This 40 CFR 139.10(b)(4) exclusion is different from the ballast water exchange and saltwater flush exemptions described in section VIII.B.1.h. of this preamble, *Ballast Water Exchange and Saltwater Flush.* 33 U.S.C. 1322(p)(2)(B)(ii)(IV).

v. Vessels Discharging Ballast Water Into a Reception Facility

The final rule excludes discharges of ballast water from a vessel that only discharges ballast water into a reception facility (which could include another vessel for the purpose of storing or treating that ballast water). In such instances, once the ballast water is offloaded to a reception facility, that ballast water would be subject to any applicable regulation for discharges from that reception facility. Consistent with the rationale provided in the 2013 VGP Fact Sheet, EPA would continue to expect that all vessel piping and supporting infrastructure up to the last manifold or valve immediately before the reception facility manifold connection, or similar appurtenance, prevents untreated ballast water from being discharged. Any such discharge not meeting this requirement would be expected to meet the ballast water discharge standards in the final rule. 40 CFR 139.10(b)(5); 33 U.S.C. 1322(p)(2)(B)(ii)(V).

c. Exemption From Existing USCG Regulations for Crude Oil Tankers Not Adopted

Crude oil tankers engaged in coastwise trade are exempted from the existing USCG regulation (33 CFR 151.2015(b)), consistent with section 1101(c)(2)(L) of the NISA (16 U.S.C. 4711). However, these same vessels are not exempted from meeting the ballast water requirements in the VGP and are not exempted under the VIDA. Therefore, pursuant to CWA section 312(p)(4)(B)(iii), which requires this rule to be at least as stringent as specified parts of the VGP, the final rule does not exempt crude oil tankers engaged in coastwise trade from meeting the ballast water requirements set forth in the rule. Such vessels are not inherently unable to perform ballast water exchanges and other ANS management practices that their non-exempt counterparts routinely carry out. EPA expects this final rule to impose no additional costs given that the requirements are presently in effect under the VGP.

d. Ballast Water Best Management Practices

Pursuant to CWA section 312(p)(4)(B)(ii), the final rule includes six ballast water BMPs for all vessels with ballast tanks and one additional ballast water BMP specific to Lakers to control or abate the number of organisms taken up and discharged in ballast water. 40 CFR 139.10(c). The final rule retains many of the ballast water BMPs included in the VGP (and present in USCG regulations at 33 CFR part 151 subpart D), in line with the VIDA's requirement that EPA's standards be at least as stringent as the VGP with limited exceptions. At present, the ballast water BMPs in this section are widely implemented and EPA has not identified any unacceptable non-water quality environmental impacts (*e.g.,* energy requirements, air impacts, solid waste impacts, and changes in waters use) related to these practices. These are demonstrated practices that EPA finds to be technologically available and economically achievable.

The final rule does not include one ballast water BMP that was included in both the VGP and USCG regulations at 33 CFR part 151 subparts C and D. The final rule does not require that vessel operators minimize or avoid uptake of ballast water in the following areas and situations: areas known to have infestations or populations of harmful organisms and pathogens (*e.g.,* toxic algal blooms); areas near sewage outfalls; areas near dredging operations; areas where tidal flushing is known to be poor or times when a tidal stream is known to be turbid; in darkness, when bottom-dwelling organisms may rise in the water column; where propellers may stir up the sediment; and areas with pods of whales, convergence zones, and boundaries of major currents.

This change is based on extensive conversations with the USCG and comments received indicating that such requirements are not practical to implement or enforce. During these conversations, new information from implementation of the VGP became available indicating that these conditions are not well-defined and are typically beyond the control of the vessel operator during the uptake and discharge of ballast water. Additionally, it is difficult for enforcement agencies to assess whether a vessel operator took appropriate actions as necessary to comply with these requirements. Therefore, it is not practical to continue to require that vessels minimize or avoid uptake of ballast water in those areas and situations. 33 U.S.C. 1314(b)(2)(B) and 33 U.S.C. 1322(p)(4)(D)(ii)(II)(aa). In lieu of including the uptake measures as individual requirements, EPA expects that appropriate vessel-specific ballast water BMPs will be incorporated into the ballast water management plans (BWMPs) discussed later in this section, as vessels must minimize the introduction and spread of ANS. For example, BWMPs could describe coordinating with local authorities to identify areas and situations of concern and any opportunities to mitigate potential issues. Demonstrating that these important considerations were made by vessel operators would provide for environmental protection but allow vessel operators to tailor measures specific to their vessel operations and routes.

Additionally, the VIDA authorizes a State to petition EPA to issue an emergency order as provided for in CWA section 312(p)(7)(A)(i) and in accordance with the procedures outlined in 40 CFR 139.50 in the event of a known outbreak of harmful algal blooms or other emergency situations. Similarly, the VIDA authorizes EPA to require, by order, the use of an emergency BMP for any region or category of vessels if it is necessary to reduce risk of introduction or establishment of ANS, or if EPA determines that the order will mitigate the adverse effects of a discharge that contributes to a violation of a water quality requirement under CWA section 303. 33 U.S.C. 1322(p)(4)(E)(i). Thus, similar BMPs may be established albeit through an order where EPA and/or the USCG identify specific instances when and where such practices must be implemented.

i. Develop a Ballast Water Management Plan

The final rule requires vessels equipped with ballast tanks to maintain a BWMP that addresses both the uptake and discharge of ballast water. 40 CFR 139.10(c)(1)(i). A vessel's BWMP must

describe the vessel-specific (*i.e.,* considering the unique operational profile of the vessel) ballast water management practices and systems that, ensure compliance with the requirements in this section. Specific details of the BWMP, including how vessel operators are to implement and follow the plan, would fall under the USCG's implementing regulations established under CWA section 312(p)(5).

In general, this carries forward the requirement in part 2.2.3.2 of the VGP requiring a vessel-specific BWMP be developed and maintained. The VGP specifies, that at a minimum, the plan is to outline how the vessel will comply with all the VGP ballast water requirements. Additionally, the requirement to maintain a BWMP is consistent with existing USCG regulations at 33 CFR 151.2050. Through these regulations, promulgated pursuant to the NISA, the USCG has required the individual in charge of any vessel equipped with ballast water tanks that operates in the waters of the United States to maintain a BWMP that has been developed specifically for the vessel and that will allow those responsible for the plan's implementation to understand the vessel's ballast water management strategy and comply with the requirements. The USCG also required BWMPs to include detailed biofouling maintenance and sediment removal procedures (33 CFR 151.2050(g)(3)).

ii. Minimize Use of Gravity To Drain Ballast Tanks in Port

The final rule requires that vessels minimize the use of gravity to drain ballast tanks while in port. 40 CFR 139.10(c)(1)(ii). Instead, ballast tanks should be discharged in port using pumps. This BMP has been shown to increase the mortality rate of living organisms in ballast water during discharge, particularly zooplankton and other larger organisms, as a result of the physical action of the pumps (*e.g.,* cavitation, entrainment, and/or impingement), and thereby reduce the propagule pressure.

iii. Use High Sea Suction

The final rule requires that, when practicable, high sea suction sea chests must be used in port or where clearance to the bottom of the waterbody is less than five meters to the lower edge of the sea chest. 40 CFR 139.10(c)(1)(iii). An example of when the use of high sea suction may not be practicable is when it is necessary to avoid ice, algae, or other biofilm on the water surface. This BMP minimizes the potential for uptake of bottom-dwelling organisms, suspended solids, particulate organic carbon, and turbidity into the ballast tanks.

iv. Avoid Ballast Water Discharge or Uptake in Areas With Coral Reefs

The final rule requires vessel owners/operators to avoid the discharge or uptake of ballast water in areas with coral reefs. 40 CFR 139.10(c)(1)(iv). This BMP is consistent with the VGP requirements; however, the VGP also included similar prohibitions for ''marine sanctuaries, marine preserves, marine parks, . . . or other waters'' listed in appendix A. The final rule carries forward these prohibitions in a section specific to activities in federally-protected waters, as described in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel–Federally-Protected Waters Requirements* and in the regulations at 40 CFR 139.40.

Further, consistent with a USCG Marine Safety Information Bulletin (*Ballast Water Best Management Practices to Reduce the Likelihood of Transporting Pathogens That May Spread Stony Coral Tissue Loss Disease*), ballast water discharges should be conducted as far from coral reefs as possible, regardless of whether the reef is inside or outside of 12 NM from shore (USCG, 2019a).

v. Clean Ballast Tanks Periodically and Prohibit Ballast Tank Cleaning Discharges

The final rule requires ballast tanks to be cleaned periodically to remove sediment and biofouling organisms. 40 CFR 139.10(c)(1)(v). Residual sediment left in ballast tanks can negatively affect the ability of a vessel to meet discharge standards, even when a BWMS is properly operated and maintained. Sediments may also allow organisms to survive in ballast tanks for prolonged periods of time in resting stages. Additionally, the final rule prohibits the discharge of sediment from ballast tank cleanings in waters subject to this rule.

vi. Maintain Sea Chest Screens

The final rule requires that sea chest screen(s) be maintained and kept fully intact. 40 CFR 139.10(c)(1)(vi). This BMP is consistent with a VGP requirement for existing bulk carriers operating exclusively in the Laurentian Great Lakes (Lakers), but the final rule expands it to all vessels with ballast tanks. These screens are designed to prevent the largest living organisms, such as fish, as well as bacteria and viruses associated with these organisms, from entering ballast tanks. Adequately maintaining sea chest screens is a simple technology-based practice that is available, economically achievable, and beneficial to all vessels to reduce the transport of organisms.

vii. New Laker Equipment Standard

The final rule establishes, as a BMP, a ballast water ''equipment standard'' that requires any new Laker to install, operate, and maintain a USCG type-approved BWMS. 40 CFR 139.10(c)(2). EPA's standard for new Lakers aligns with the ''technology-forcing'' nature of the BAT statutory standard. *See NRDC* v. *EPA,* 822 F.2d 104, 123 (D.C. Cir. 1987); *See also Southwestern Elec. Power Co.* v. *EPA,* 920 F.3d at 1003 (''By requiring BAT, the Act forces implementation of increasingly stringent pollution control methods.''). This approach is consistent with the option discussed in the supplemental notice. Discussion of EPA's rationale for exempting both new and existing Lakers from the numeric ballast water discharge standard is provided in section VIII.B.1.f.v. of this preamble, *Vessels that Operate Exclusively in the Laurentian Great Lakes.*

The final rule defines a ''new Laker'' as any vessel 3,000 GT and above, and that operates exclusively in the Great Lakes and the St. Lawrence River west of a rhumb line drawn from Cap des Rosiers to Pointe-de-l'Ouest (West Point), Anticosti Island, and west of a line along 63° W. longitude from Anticosti Island to the north shore of the St. Lawrence River, and constructed after the effective date of USCG regulations promulgated pursuant to CWA section 312(p)(5)(A)(i). 40 CFR 139.2. The final definition for, and use of the term, ''new Laker'' corrects an improper citation in the supplemental notice to the French spelling of ''West Point'' to correctly read ''Pointe-de-l'Ouest'' not ''Pointe-Sude-Oueste.'' The final definition for ''seagoing vessel'' was also corrected to reference ''Pointe-de-l'Ouest.''

As described in section VIII.B.1.e.i.1 of this preamble, *BAT for Control of Ballast Water Discharges is the Use of a USCG Type-Approved BWMS,* the requirement to use a type-approved BWMS is a well-established and demonstrated process for selection of technologies. The final rule requires the use of a USCG type-approved BWMS because this process comprehensively addresses BWMS design, installation, operation, safety, and performance.

Land-based and shipboard testing of ultraviolet (UV) and chemical addition BWMSs in the Great Lakes have demonstrated a substantial reduction in organisms even when the numeric

discharge standard cannot be achieved (GSI, 2011; GSI 2015; Bailey et al., 2023). An equipment standard allows vessels flexibility to operate BWMSs in challenging water conditions through use of operational contingency measures. Additionally, these implementation details can be determined in the USCG regulations. Although contingencies may be necessary in certain locations or at certain times of the year in the Great Lakes, EPA expects that continued operation of a BWMS consistent with an equipment standard over the lifetime of a vessel will still provide reductions in the discharge of organisms. Additionally, new Lakers can be designed and constructed to accommodate a USCG type-approved BWMS and overcome certain operational and technical challenges such as corrosion, flow rate capacity, lack of space and lost cargo capacity, and adequate power.

As described in the supplemental notice in section IV.B., *Ballast Tanks—Equipment Standard for New Lakers* (88 FR 71788, October 18, 2023), the final rule does not establish an equipment standard for existing Lakers as BAT because technical and operational challenges would create disproportionately high costs to retrofit BWMSs onto existing Lakers. *See* 88 FR 71800, October 18, 2023, section IV.B.3.I. Existing Lakers also do not have the engineering flexibility available during the initial design and construction process to incorporate ballast water treatment capabilities.

Also, two provisions in the VIDA, when read together, demonstrate Congress' intent for EPA to undertake additional research to develop effective ballast water management solutions for existing Lakers. First, section 903(g) of the VIDA authorized the EPA Administrator to establish the Great Lakes and Lake Champlain Invasive Species Program within the Great Lakes National Program Office that has as one of its purposes ''to develop, achieve type-approval for, and pilot shipboard or land-based ballast water management systems installed on, or available for use by, commercial vessels operating solely within the Great Lakes and Lake Champlain Systems to prevent the spread of aquatic nuisance species populations within the Great Lakes and Lake Champlain Systems.'' This program is to be developed in collaboration and consultation with several other Federal agencies. As described therein, ''commercial vessels operating solely within the Great Lakes and Lake Champlain Systems'' are, as defined by EPA, ''Lakers.'' Thus, Congress clearly intended for EPA to work towards finding ballast water management solutions for existing Lakers and acknowledged that there were special technological challenges presented by Lakers. Second, section 903(a)(1) of the VIDA, specifically as codified in CWA section 312(p)(6)(C), established a ''period of use of installed BWMSs'' clause that specifies that a vessel is deemed to be in compliance if the vessel is meeting the ballast water discharge standard that was applicable to the vessel at the time of installation of the existing BWMS, even if EPA subsequently establishes a more stringent discharge standard. Thus, an existing Laker required to install a BWMS to meet the discharge standard would be unlikely to benefit from any improved ballast water management practices developed as part of the ballast water research. EPA's seven-year Great Lakes Ballast Water Research and Development Plan is targeted to address the complexities and improve the operation of BWMSs on existing Lakers. EPA is also required to review and revise as appropriate its VIDA standards of performance every five years. 33 U.S.C. 1322(p)(4)(D)(i). As such, EPA expects the outcome of that research will support future discharge requirements for these vessels with a focus on finding effective technologies for the management of ballast water.

e. Numeric Ballast Water Discharge Standard

EPA is establishing BAT effluent limitations for ballast water based on the technologies required by the VGP and USCG ballast water regulations. The final rule at 40 CFR 139.10(d) continues, as a numeric discharge standard, the numeric limitations for biological parameters from the VGP and USCG ballast water regulations at 33 CFR part 151 subpart D, as follows:

- Organisms greater than or equal to 50 micrometers in minimum dimension: discharge must include less than 10 living organisms per cubic meter of ballast water.
- Organisms less than 50 micrometers and greater than or equal to 10 micrometers: discharge must include less than 10 living organisms per milliliter (mL) of ballast water.
- Indicator microorganisms must not exceed:
  - Toxicogenic *Vibrio cholerae* (serotypes O1 and O139): a concentration of less than 1 colony-forming unit (cfu) per 100 mL.
  - *Escherichia coli:* a concentration of less than 250 cfu, or Most Probable Number (MPN), per 100 mL.
  - Intestinal enterococci: a concentration of less than 100 cfu, or MPN, per 100 mL.

The final rule defines ''living'' using the CWA section 312(p)(6)(D) clarification that the terms ''live'' and ''living'' shall not include an organism that has been rendered nonviable or preclude the consideration of any method of measuring the concentration of organisms in ballast water that are capable of reproduction. 40 CFR 139.2. However, it is important to recognize that, to date, the USCG has not identified any testing protocols, based on best available science, that are available for use to quantify organisms in ballast water that are capable of reproduction. As such, demonstrating compliance with the discharge standard would require the use of test methods, as detailed in the 2010 EPA Generic Protocol for the Verification of Ballast Water Treatment Technology, that do not consider non-viable organisms as part of the test protocol (U.S. EPA, 2010). In the future, should the USCG identify one or more testing protocols that enumerate organisms in ballast water capable of reproduction, such methods would be acceptable for demonstrating compliance with the numeric ballast water discharge standard.

The final rule reflects units of both MPN/mL and cfu/mL for *Escherichia coli* and intestinal enterococci in 40 CFR 139.10(d), and (g)(2) for the Pacific Region, based on input from commenters who pointed out that newer microbiological test methods have MPN outputs and that, while the test methods differ, the number of bacteria in the tested sample are comparable to the numeric discharge standard.

In addition, the final rule at 40 CFR 139.10(d)(2) continues the discharge limitations as a numeric standard for four biocide parameters contained in the VGP, namely:

- For any BWMS using chlorine dioxide, the chlorine dioxide must not exceed 200 µg/L;
- For any BWMS using chlorine or ozone, the total residual oxidizers must not exceed 100 µg/L; and
- For any BWMS using peracetic acid, the peracetic acid must not exceed 500 µg/L and the hydrogen peroxide must not exceed 1,000 µg/L.

The standard for both the organisms and biocide parameters represents instantaneous maximum values not to be exceeded.

The final rule continues the requirement contained in the VGP and USCG regulations (33 CFR part 151) that, prior to the compliance date for the vessel to meet the discharge standard,

ballast water exchange must be conducted as required in 40 CFR 139.10(e), or the applicable regional requirements in 40 CFR 139.10(f) and (g), for any vessel subject to the ballast water discharge standard. The USCG is required to include compliance dates in its implementing regulations established under CWA section 312(p)(5)(A)(iv).

For the reasons described in the following section, BAT for ballast water management remains the use of a USCG type-approved BWMS as required long-term under the USCG ballast water regulations and VGP. Accordingly, that is the technology on which EPA has based the numeric ballast water discharge standard.

i. BAT Rationale for Standard Pursuant to the VIDA

(1) BAT for Control of Ballast Water Discharges Is the Use of a USCG Type-Approved BWMS

(a) EPA Conducted a Comprehensive Survey of Technologies for Purposes of Identifying BAT

EPA based its analysis of prospective BAT model technologies largely on data generated through the USCG BWMS type-approval process. In response to concerns expressed by commenters that EPA failed to review sufficient data for the proposed rule, EPA requested and obtained directly from the USCG a large set of land-based and shipboard USCG BWMS type-approval data for the 37 BWMSs that had been type-approved as of the date of the proposed rule (October 2020) and similar data for 16 amendments to those systems. In total, EPA analyzed 1,820 treatment discharge results from 49 BWMS type-approval data sets. The complete set of USCG BWMS type-approval data provided to EPA by the USCG and the Agency's comprehensive *Ballast Water BAT Data Analysis* of these data, including a sensitivity analysis, are included in the docket (U.S. EPA, 2023), and are updated for the final rule (U.S. EPA, 2024). As of April 30, 2024, the USCG has type-approved 54 BWMSs. Some commenters suggested that EPA should analyze more recent data. However, EPA is unaware of any significant improvements in ballast water technology, monitoring, or testing. As such, allowing more time for the USCG to compile and share additional data with EPA on additional systems that have been type-approved since the proposed rule would not have meaningfully altered the results of the analysis. Additionally, it takes significant time for USCG to compile and share data with EPA. For example, EPA received USCG data 16 months after the initial formal request to USCG for the compiled type-approval data. Thus, given the time it takes USCG to compile and share data with EPA, EPA selected an appropriate cutoff point for the collection of data to enable timely analysis to proceed.

EPA did not analyze IMO type-approval data for its BAT analysis here, and EPA's rationale for excluding IMO type-approval data from its analysis is described in both the proposed rule and supplemental notice (85 FR 67818, October 26, 2020, section VIII.B.1.v.A.3.i. and 88 FR 71788, October 18, 2023, section III.A.1).

(b) USCG Type-Approved BWMSs Are Technologically Available and Economically Achievable

Based on its review of available information, for this final rule, EPA selected all currently available USCG type-approved BWMSs as BAT for control of ballast water discharges. EPA's final rule includes a numeric ballast water discharge standard based on that technology. This outcome is consistent with the requirements in the VGP, which also identifies USCG type-approved BWMS as BAT and has the same numeric standards as the final rule.

EPA has determined that the standard for ballast water discharges in the final rule is technologically available and economically achievable. This determination is based in part on the fact that EPA assessed the same type-approval process and similar technologies under the VGP and determined that USCG type-approved BWMS were technologically available and economically achievable for that permit. As discussed in more depth below, EPA assessed additional data regarding USCG type-approved systems and, based both on its prior analysis and new data and analysis, continues to find the suite of USCG type-approved BWMSs to be BAT. Additionally, vessels in the United States have been required to meet the same numeric standard reflecting USCG type-approved BWMSs as BAT under the 2013 VGP, which further supports EPA's determination that such systems are technologically available and economically achievable.

The fact that these systems are approved through the USCG's type-approval process also supports their availability for use on the full universe of vessels regulated by the VIDA. USCG regulations include BWMS type-approval requirements that consider design, installation, operation, and testing to ensure any type-approved system meets both performance and safety standards. 46 CFR 162.060. The type-approval process also supports the availability of these systems despite the challenges vessels present that are not present for stationary facilities for which EPA routinely establishes national discharge effluent limitations guidelines and standards based on BAT. For example, the USCG type-approval process separately requires that the BWMS be practicable onboard a vessel (*e.g.,* able to operate despite roll, pitch, and vibration considerations), compatible with other onboard systems, durable, and be supported by credible and sustainable system manufacturers, suppliers, and servicers. Additionally, to be installed on any U.S.-flagged vessel, the USCG must verify the system meets certain installation and engineering requirements specified in 46 CFR subchapters F and J.

(c) USCG Type-Approved BWMSs Have Acceptable Non-Water Quality Environmental Impacts

EPA also considered non-water quality environmental impacts of its ballast water standards as part of its BAT analysis. EPA previously determined for the VGP that its numeric ballast water standards had acceptable non-water quality environmental impacts, and the Agency is not aware of any new information since the VGP that would cause EPA to reach a different determination for this final rule. In particular, based on its experience implementing this requirement for vessels since the 2008 VGP, EPA has not found this requirement to have unacceptable non-water quality environmental impacts. Specifically, EPA has considered the impacts of its standards related to increased energy usage for operating treatment equipment and associated greenhouse gases from an incremental increase in fuel consumption. Any such impacts are far exceeded by the effluent reduction benefits of treatment. Additionally, EPA's standard allows vessel operators to select from a broad range of type-approved systems to best meet their vessel's needs, including where appropriate to reduce energy requirements. For these reasons, EPA's ballast water numeric standard will not have unacceptable non-water quality environmental impacts.

(d) Harmonization With an International Standard Further Supports EPA's Selection of USCG Type-Approved BWMSs as BAT

In identifying a model BAT technology for this rule, EPA determined it was appropriate to consider whether its numeric standard

was harmonious with international standards and promoted international comity. In particular, for ballast water discharges, the current world economic and trade system is predicated on timely and efficient maritime transportation, a significant proportion of which operates globally where trade takes it. The final numeric ballast water discharge standard acknowledges, as described in the preamble to the proposed rule, that a majority of the vessels discharging ballast water in waters of the United States spend the majority of their time operating outside of waters of the United States (U.S. EPA, 2020) and that these vessels for the most part are obligated to comply with the IMO International Convention for the Control and Management of Ships' Ballast Water and Sediments (the BWM Convention)—an international treaty developed with a goal of establishing an international standard for the management of ballast water (IMO, 2004)—anywhere they operate in the world, including while operating in the United States. This is not to say that U.S. requirements must or should always be identical with the international standard; however, it is appropriate, in EPA's view, to consider whether U.S. requirements are harmonious with international obligations for the vessels of flag states that have signed onto that BWM Convention.

Indeed, the BWMS type-approval process was first developed as part of the IMO BWM Convention. The BWM Convention was adopted in 2004 after more than 14 years of complex negotiations between IMO member states and entered into force in 2017. The United States is not a party to the BWM Convention; however, both the USCG (serving as the lead for the U.S. delegation) and EPA were actively involved in the standard setting discussions that led to the BWM Convention numeric discharge standard that entered into force in September 2017. The USCG developed domestic type-approval regulations with the intent to harmonize as closely as possible with the adopted BWM Convention.

While EPA received comments arguing that it should identify BAT based on the performance of a subset of the perceived most stringent of type-approved systems, pollutant discharge reductions are not the sole factor relevant to BAT under CWA section 304(b). As discussed in more detail in the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.1.v.A.2.ii.), the BAT consideration factors in CWA section 304(b), particularly with respect to the ''process employed'' and ''engineering aspects of the application of various types of control techniques,'' weigh in favor of establishing the ballast water standard at a level of consistency with the IMO standard. Furthermore, section 304(b)(2)(B) authorizes EPA to consider ''such other factors as the Administrator deems appropriate'' and EPA has broad discretion in considering those factors and the weight attributed to such factors. *See Weyerhaeuser Co.* v. *Costle,* 590 F.2d 1011, 1028, 1045 (D.C. Cir. 1978); *Texas Oil & Gas Ass'n* v. *EPA,* 161 F.3d 923, 928 (5th Cir. 1998). Here, EPA considers consistency with the international standard to be an appropriate factor that weighs in favor of the BAT selected in this final rule because it promotes international trade and comity.

(e) USCG Type-Approved BWMSs Make Reasonable Further Progress Toward the National Goal of Eliminating the Discharge of All Pollutants

EPA's ballast water standard based on USCG type-approved systems as BAT also makes reasonable further progress toward the national goal of eliminating the discharge of all pollutants. *See* CWA section 304(b)(2)(B). As detailed in the preamble for the proposed rule, these systems have been shown to substantially reduce the concentration of living organisms in ballast water discharges and beyond the reduction achieved through midocean exchange or unexchanged ballast water. Specifically, as illustrated in table 1 of the proposed rule, pollutant discharge reduction attributable to type-approved BWMS performance is extremely high, with properly operated and maintained systems achieving treatment efficiencies of more than 99 percent. Furthermore, EPA notes that vessel ballasting practices to minimize volumes of ballast water requiring management will likely continue to evolve into the future, further driving reductions of pollutant discharges.

Opportunities for advancement in ballast water treatment and technology may involve EPA and/or the USCG assisting the vessel community in addressing installation and operational challenges with the existing BWMSs and future type-approved systems and BMPs. The VIDA provides EPA and the USCG with this opportunity to enhance the ballast water regulations, which should aid with the operation of demonstrated, but not yet fully optimized, systems and with future systems as they continue to be developed and deployed.

(2) EPA Rejects Other Technologies as BAT for Controlling Discharges of Ballast Water

Some commenters suggested that EPA should identify a single-best performing BWMS or a subset of better-performing BWMSs and impose that perceived level of performance on the entirety of the universe of potentially affected entities. EPA disagrees that the available information indicates that a higher-performing system or subset of systems can be identified as BAT from the data in the record. Additionally, even if higher performing systems could be identified, the record does not demonstrate that a small subset of systems capable of meeting a more stringent standard would be available to all vessels that would be required to meet a standard based on those systems, given the tremendous variability among vessels.

Based on its analysis of USCG type-approval data described in the supplemental notice, EPA disagrees with commenters that the record allows for identification of a subset of so-called best-performing BWMSs. EPA's analysis specifically addressed commenters' suggestion and evaluated whether statistical differences in the treatment effectiveness of BWMSs could help identify systems that perform significantly better in terms of pollutant discharge reductions, such that they could reflect BAT. To do so, EPA compared treatment discharge concentrations of the BWMSs within six groups defined by the two common organism size class and three salinity categories. Statistical tests conducted and summarized in the Agency's comprehensive *Ballast Water BAT Data Analysis* (U.S. EPA, 2024) showed significant differences among systems within each group but did not point to any clear stratification of ''best'' or ''worst'' system groupings. Further complicating this analysis, the effectiveness of systems varied by organism size and/or salinity, such that systems had different relative comparisons depending on the group within which they were evaluated. For example, one system may have produced lower concentrations in one organism size class but not in the other size class, making an overall determination of that system's treatment effectiveness compared to other systems uncertain.

The results of this statistical analysis did not point to any clear identification of a subset of BWMSs that stood out as representing BAT. Test results for both the baseline and sensitivity analyses were within the same order of

magnitude as the standard in the proposed rule and fall within the margin of error expected due to the variability associated with the characteristics of ballast water and challenges associated with monitoring, analyzing, and enumerating organisms in the different size classes. Based on the data analysis of the USCG type-approval data, EPA did not identify any single system or subset of systems that might be identified as BAT based on their superior performance in terms of pollutant discharge reductions.

EPA also disagrees with the suggestion to base BAT on a small subset of systems because that suggestion does not account for the substantial variability among vessels. This variability dictates the need for a range of different BWMS options to adequately address organism reduction in ballast water discharges. That is, a BWMS that is technically and operationally appropriate for one vessel or set of conditions may not be available for a different vessel, or even a similar vessel with a different operating profile. EPA's BAT determination carries forward the existing regulatory approach, promoting the type-approval process using a range of types of BWMS disinfection technologies that operate under a wide range of conditions, thereby allowing vessel operators to select a system that is most appropriate for their vessel. The final rule provides the necessary flexibility for the vessel owner/operator to select a system that has been demonstrated through the existing USCG type-approval process as both capable of achieving the final numeric discharge standard and as suitable for their particular vessel.

(3) EPA's Numeric Ballast Water Discharge Standard Is Supported by the Data in the Record

EPA's numeric ballast water discharge standard is supported by the data in the record for several reasons. First, EPA's experience with the VGP has demonstrated that the numeric standard is achievable for vessels subject to regulation under this rule. Based on its BAT analysis for the VGP and its subsequent administration of the VGP, EPA has direct knowledge that the numeric standard can be attained.

Second, EPA's standard is based on USCG type-approved systems, which are designed and demonstrated to allow vessels to consistently achieve the numeric discharge standard. The goal of the USCG type-approval process is to demonstrate that a BWMS can treat ballast water such that organism concentrations in discharged water are sufficiently low to meet the discharge standard (*e.g.,* less than 10 organisms per cubic meter of ballast water as an instantaneous maximum) for a given number of consecutive valid tests. Type-approval is a critical step in verifying that a BWMS, when tested under standardized and relatively challenging conditions, is capable of consistently meeting a discharge standard. In the USCG type-approval testing process to determine biological efficacy, careful analyses are employed to: (1) assure the source water for testing meets a threshold concentration of organisms to meaningfully challenge the BWMS; and (2) to quantify (ideally, sparse) concentrations of living organisms in treated discharge water. As part of its type-approval procedure, the USCG regulations require BWMS land-based testing to be conducted pursuant to the ETV Protocol (*i.e.,* the 2010 *Generic Protocol for the Verification of Ballast Water Treatment Technology,* developed under the now defunct EPA Environmental Technology Verification Program) that outlines the experimental design, sampling and analysis protocols, test, and reporting requirements (U.S. EPA, 2010). This rigorous process ensures that systems are consistently able to meet EPA's standard.

Third, EPA's numeric standard appropriately accounts for various sources of variability inherent in addressing organisms (including ANS) in ballast water, including:

- Vessel size and architectural characteristics, including but not limited to design of ballast tank(s), pump(s), and piping configuration;
- Vessel operational profile (*e.g.,* voyage lengths, volumes of ballast water, ballast water flow rates, etc.);
- Vessel class and flag State;
- Temperature, salinity, and turbidity range of uptake water in areas where the vessel voyages;
- Duration of voyages and segments of each voyage that can affect the necessary holding time for certain systems;
- Ballast water capacity and required uptake and discharge pumping rates;
- Treatment system weight and space considerations, including but not limited to accessibility and acceptability for use in hazardous spaces;
- Availability of service, support, replacement parts, supplies, etc. in areas where the vessel voyages;
- Compatibility of treatment with vessel construction (*e.g.,* corrosivity concerns);
- Power demand and energy consumption to pump ballast and operate treatment system; and
- Safety concerns (*e.g.,* explosivity risks, particularly on oil and chemical carriers).

As EPA has historically done with respect to developing effluent limitations guidelines, EPA is not specifying a single technology that must be used, but rather it is identifying one or more technologies that have been demonstrated as being capable of meeting the discharge standard. The discharger is free to select a technology most suitable for its operations and compliance (to be determined by USCG) is able to be demonstrated through routine self-monitoring. The USCG type-approved its first BWMS in 2016 and, to date, more than fifty systems have been approved through that process (USCG, 2024). The wide range of systems demonstrated to meet EPA's numeric standard thus accounts for the variability in vessel characteristics, operations, and conditions.

(4) EPA Rejects an Alternative Numeric Standard Based on Several Factors

Commenters suggested that EPA adopt different or lower numeric standards for ballast water, arguing that EPA's data indicates that a limit of less than 10 organisms per volume of ballast water as an instantaneous maximum is not supported by available data as the most stringent limit that could be set based on USCG type-approved BWMSs. Specifically, commenters urged that EPA's results indicated that a numeric standard could be set at 6.01 or 6.66 organisms/volume for large and medium organisms size classes, respectively, or even at lower levels based on the results of single systems or subsets of systems. EPA has carefully considered this issue but disagrees with commenters for several reasons.

(a) Observed Numeric Differences in Test Results Are Not Scientifically Significant in Light of Existing Variability

EPA disagrees that the USCG test results that EPA reviewed as part of this rulemaking indicate that additional pollutant control may be achieved through the application of a more stringent discharge standard such as one around 6 organisms. Whether the standard is set at approximately 6 or 10 organisms, both results are within the margin of error expected given variability in type-approval sampling and analysis. For example, stratification in ballast tanks, variability between tanks, flow rates, and contamination in uptake and discharge pipes are just a few of the considerations that may impact type-approval testing. It is also a challenge to capture and count

appropriately sized organisms and to collect samples such that the sample collection process does not physically damage or kill these organisms (which should be counted as dead or nonviable only if such happens as a result of the BWMS, not because of poor sample collection and handling practices). Any perceived difference in system performance could easily be due to the variability in ballast water uptake and testing, and not necessarily indicative of improvement in treatment effectiveness that would warrant a revised standard. Indeed, the Second Circuit has recognized and upheld in the context of measuring aquatic organisms that discharge standards that are not identical may nonetheless represent the same level of control. *Riverkeeper, Inc.* v. *EPA,* 358 F.3d 174, 188–89 (2d Cir. 2004) (upholding EPA's Track II requirements allowing for ''substantially similar'' reductions in impingement and entrainment at new facility cooling water intake structures as not a less stringent standard but the same standard accounting for the measurement margin of error when measuring in the natural environment).

Even a standard 10 to 100 times more stringent than EPA's would be insignificant and within the margin of error in terms of the expected level of pollution control. For example, as EPA explained in its proposed rule, achieving a standard 10 times more stringent than the standard in the final rule would result in a difference of between 99.92 and 99.99 percent treatment efficiency for large organisms and 97.82 and 99.78 percent treatment efficiency for medium organisms. From the perspective of the effectiveness of the technology (and given the limitations in sampling and monitoring), the differences between 99.92 and 99.99 percent effective are scientifically insignificant.

(b) Alternative Numeric Standards Would Not Account for Variability

A more stringent numeric standard would also fail to account for the variability inherent in ballast water management. Variability is inherent to all treatment systems, including well-operated treatment systems. When EPA establishes BAT, it must consider the variability of a well-operated treatment system to ensure that technology is available to achieve the discharge standard. EPA's approach to providing for some variability for well-operated systems in establishing BAT limits in effluent limitations guidelines rulemakings has been upheld. For example, in *Nat'l Wildlife Fed'n* v. *EPA,* 286 F.3d 554, 572 (D.C. Cir. 2002), the D.C. Circuit upheld EPA's decision to set the monthly average at the 95th percentile by stating that EPA has considerable discretion in determining a technical approach that will ensure that the effluent limitations reasonably account for the expected variability in plant operations while still maintaining an effective level of control. *See also Chemical Mfrs. Ass'n* v. *EPA,* 870 F.2d 177, 229 (5th Cir. 1989) (explaining that the purpose of these variability factors is to account for routine fluctuations that occur in plant operation, not to allow poor performance). As is typically the case in the effluent guidelines program, operators design pollution control systems to achieve results below the discharge standard on a long-term basis to account for normal variability of well-operated systems. Setting the numeric standard at the lowest measured levels or long-term average levels, as some commenters suggested, does not allow for this normal variability in system performance.

In the case of ballast water, the operators experience an even greater challenge meeting the numeric discharge standard than would exist at a shoreside facility subject to a typical effluent guideline. Instead of the numeric discharge standard being a long-term or monthly average as it is for most land-based facilities, the VIDA standard is based on an instantaneous maximum standard, never to be exceeded. EPA reasonably selected an instantaneous maximum as the unit of time for compliance monitoring because of the challenges associated with monitoring, acknowledging that variations in turbidity, salinity, temperature and other environmental factors can significantly affect a vessel operator's ability to meet the discharge standard at all times. BWMS manufacturers must account for these two conflicting challenges—continuous compliance and inherent variability—in their system design and operation. BWMS vendors accomplish this by: (1) designing their systems to achieve long-term average discharge concentrations that are lower than the numeric discharge standard; and (2) adequately controlling for variation in BWMS performance such that the system can meet the numeric discharge standard even in the most challenging conditions. Designing and operating BWMSs to consistently achieve levels close to the numeric discharge standard is poor practice because even relatively slight variability would result in a high rate of non-compliance with the instantaneous maximum numeric discharge standard (and would not, for example, pass the USCG type-approval testing process). This partially explains why some of the test results described by the Second Circuit Court decision on the VGP were lower than the current standard. *Nat. Res. Def. Council* v. *EPA,* 808 F.3d 566, 570 n.11 (2d Cir. 2015). EPA recognizes that variability in performance around the long-term average occurs during normal operations and that, at times, even well-operated BWMSs are certain to discharge at levels that are higher than the long-term average performance. EPA considered the need to consistently meet an instantaneous maximum standard given system variability in setting its numeric standard, but the standards suggested by commenters fail to do so.

(c) Alternative Numeric Standards Would Present Monitoring Challenges

As described in the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.1.v.A.3.iv.), there are monitoring challenges associated with collecting and analyzing ballast water to detect and quantify organisms at levels lower than the final numeric standard in this rule. These challenges gave EPA low confidence in the ability of a vessel to demonstrate compliance with a lower numeric discharge standard. Even monitoring to assess compliance with the final discharge standard presents challenges. For example, in the 2013 VGP, the three-component self-monitoring program excluded monitoring for the two largest organism size classes because of the difficulties/costs associated with directly self-monitoring living organisms in ballast water discharges. Rather, the 2013 VGP established a self-monitoring program that serves as an indicator of system performance while operating as the system was designed (and type-approved).

The proposed rule described the practical and statistical challenges associated with performing the tests that would be necessary to show that a well-operated BWMS is able to reliably meet a more stringent or ''no detectable organisms'' standard and after consideration of relevant comments, EPA also did not adopt a ''no detectable organisms'' standard in the final rule. There are no performance data available at concentrations of less than one organism per volume of ballast water for the two largest organism size classes. The Agency noted that test methods (and associated method detection limits) prevent demonstrating that any BWMS can achieve a standard more stringent than the 2013 VGP numeric discharge limit. EPA highlighted that, consistent with findings of EPA's Science Advisory

Board (SAB), it was unreasonable to assume that a test result showing zero living organisms using currently available test methods demonstrates complete sterilization, if for no other reason than a sample taken represents a very small portion of the overall discharge and the collection of that sample may miss the few live organisms present in the discharge. Collecting larger volumes of ballast water to address this uncertainty is also impractical. For example, the SAB estimated that anywhere from 120 to 600 cubic meters of ballast water (similar to the amount of water that would be needed to fill about one to five standard school buses) would have to be collected to adequately assess whether the discharge meets a standard 10 times more stringent (U.S. EPA, 2011).

ii. Ballast Water Reception Facilities

EPA received comments urging that it should base BAT on the use of ballast water reception facilities. The VIDA expressly excludes from the discharge standards ''ballast water from a vessel . . . that only discharges water into a reception facility.'' 33 U.S.C. 1322(p)(2)(B)(ii)(V). As such, CWA section 312(p) does not authorize EPA to regulate the transfer of ballast water from ships to a reception facility under the VIDA. Nonetheless, for purposes of the final rule and consistent with the 2015 Second Circuit Court decision on the VGP, EPA reviewed and considered whether zero discharge or a more stringent discharge standard based on the use of a reception facility may be BAT for ballast water discharged from regulated vessels. *Nat. Res. Def. Council* v. *EPA,* 808 F.3d 566, 572–75 (2d Cir. 2015). Unless otherwise noted, the terms ''onshore'' and ''reception facility'' refer to both the transfer of ballast water to either an onshore reception facility or another vessel for the purpose of storing or treating that ballast water.

For the reasons detailed in the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.1.v.B.), based on the record before it, EPA continues to conclude that reception facilities are not technologically available or economically achievable at this time for the purpose of establishing a uniform Federal discharge standard. While EPA understands that the use of reception facilities, if available, may be a valid and effective component of ballast water management in certain situations, the challenges in creating such a comprehensive infrastructure nationwide make reception facilities not technologically available as BAT. (*See* 85 FR 67818, October 26, 2020, section VIII.B.1.v.B., for a more detailed explanation of EPA's consideration of ballast water reception facilities as BAT.) It is unlikely that ballast water reception facilities could become a national ''one size fits all'' option for ballast water management, principally because it cannot accommodate widely varying trade routes without the availability of reception facilities in most ports. Port-specific conditions may also preclude any technologically available and/or economically achievable reception facility alternatives. Integration with port and vessel operations would require careful planning, design, and operation. If in the future reception facilities become available and economically achievable and have acceptable non-water quality environmental impacts in specific locations for certain specialized sectors of the commercial vessel industry, EPA can revisit the standards. For now, such an option has not been demonstrated to reflect BAT. EPA's finding that reception facilities do not represent BAT for purposes of establishing a Federal standard does not preclude a vessel from using such a facility for managing its ballast water where such an opportunity exists.

f. Exemptions From the Numeric Ballast Water Discharge Standard

The final rule exempts certain vessels from the numeric ballast water discharge standard as specified in 40 CFR 139.10(d)(3). These exemptions are generally consistent with the VGP and USCG regulations (33 CFR part 151 subparts C and D) except as described below. In contrast to the exclusions in 40 CFR 139(b) that exclude certain vessels from the ballast water discharge standard in its entirety, the eight exemptions in 40 CFR 139.10(d)(3)(i) through (viii), as described in this section, exempt vessels from the numeric ballast water discharge standard in 40 CFR 139.10(d) only. Exempt vessels are required to meet the ballast water BMPs and the ballast water exchange and saltwater flush requirements included in 40 CFR 139.10(c) and (e), respectively, as applicable. These exemptions are generally consistent with the VGP and USCG regulations (33 CFR part 151 subparts C and D), with some exceptions.

i. Vessels Less Than or Equal to 3,000 GT (1,600 GRT if GT Is Not Assigned) and That Do Not Operate Outside the EEZ

Consistent with the VGP and USCG regulations at 33 CFR 151.2015, the final rule exempts from the numeric ballast water discharge standard vessels that are less than or equal to 3,000 GT (1,600 GRT if GT is not assigned) and that do not operate outside the EEZ. 40 CFR 139.10(d)(3)(i). This includes both seagoing and non-seagoing vessels. EPA bases this exemption on the finding that ballast water technologies are not available or economically achievable for this universe of smaller vessels (*e.g.,* tugboats). BWMSs generally have been designed for larger vessels or vessels that only uptake or discharge ballast water on either end of longer voyages. EPA considered whether a different threshold in terms of size should be used; however, EPA did not identify, nor did commenters provide, information suggesting a different threshold would be appropriate. Therefore, EPA continues to conclude in this final rule that a numeric ballast water discharge standard is infeasible and that the BMPs imposed constitute BAT (requires this class of vessels to minimize the discharge of pollutants in ballast water through BMPs only).

ii. Vessels That Are Non-Seagoing, Unmanned, Unpowered Barges

The final rule exempts from the numeric ballast water discharge standard any non-seagoing, unmanned, unpowered barge that is not part of a dedicated vessel combination. 40 CFR 139.10(d)(3)(ii). A dedicated vessel combination includes an integrated or articulated tug barge (ATB) unit consisting of two separate vessels that operate in tandem, always together. The VGP, in Part 2.2.3.5.3.2, exempted all unmanned, unpowered barges from compliance with the numeric ballast water discharge standard; however, the USCG regulations at 33 CFR 151.2015 did not exempt any seagoing vessel 3,000 GT (1,600 GRT if GT is not assigned) and above or that operates outside of the EEZ.

The record indicates that an unmanned, unpowered barge, when part of a dedicated vessel combination, can install a BWMS as may be necessary to meet the discharge standard. As such, EPA is clarifying that these dedicated vessel combinations, even when they include an unmanned, unpowered barge component, are not exempt from compliance with the numeric ballast water discharge standard.

Most unmanned, unpowered barges operate in internal and coastal waterways (*i.e.,* non-seagoing) to transport bulk items such as grain, coal, and iron ore. These vessels have no onboard crew and do not have infrastructure that allows for complex or energy intensive operations. EPA understands that ballasting for some of

these barges is performed in limited instances, such as to pass under bridges or to improve stability in bad weather or other rough water. These barges typically do not have dedicated ballast tanks but can use wing tanks (void space) in the hull when ballasting is necessary. As such, minimal water is used for ballasting.

Unmanned, unpowered barges have been recognized as experiencing unique challenges for managing ballast water. For instance, EPA's Science Advisory Board (SAB) notes: ''Inland waterways and coastal barges are not self-propelled, but rather are moved by towing or pushing with tugboats. Because these vessels have been designed to transport bulk cargo, or as working platforms, they commonly use ballast tanks or fill cargo spaces with water for trim and stability, or to prevent excessive motions in heavy seas. However, the application of [ballast water management systems] on these vessels presents significant logistical challenges because they typically do not have their own source of power or ballast pumps and are unmanned.'' (U.S. EPA, 2011b). Therefore, the final rule requires this class of vessels to minimize the discharge of pollutants in ballast water through BMPs only.

iii. Vessels That Uptake and Discharge Ballast Water Exclusively in the Contiguous Portions of a Single COTP Zone

Consistent with the VGP and USCG regulations at 33 CFR 151.2015(c) and (d)(3), the final rule exempts from the numeric ballast water discharge standard vessels that uptake and discharge ballast water exclusively in a single Captain of the Port Zone (COTP) Zone, but that may operate in more than one COTP Zone. 40 CFR 139.10(d)(3)(iii). The rule, as proposed and finalized, clarifies that this exemption applies within the contiguous portion of any single COTP Zone. EPA added the term ''contiguous portions'' of a single COTP Zone, consistent with its use in the VIDA (*See* 33 U.S.C. 1322(p)(6)(B)(ii)(II)(bb)), to clarify that the exemption applies to ballasting and deballasting operations within a single COTP Zone spanning contiguous waters within the Exclusive Economic Zone (EEZ) and does not apply in those instances when a COTP Zone includes areas that are not within a single bounded EEZ. For example, in the Pacific Region, Sector Honolulu covers all of the Hawaiian Island chain, American Samoa, Wake Island, and other widely dispersed areas in the Pacific Ocean that in certain instances require vessels to leave the EEZ to travel from one location to another, all within the same COTP Zone.

This exemption is consistent with requirements of the VGP. Additionally, it recognizes that ensuring that the operations of these vessels remain within a single COTP zone is highly effective and the best available technology for minimizing the introduction and spread of ANS from vessel discharge because organisms discharged in their ballast water are unlikely to be foreign and invasive. This exemption does not apply to the ballast water BMPs for these vessels to ensure that ballast water is managed appropriately.

iv. Vessels That Travel No More Than 10 Nautical Miles and Do Not Pass Through Any Locks During Their Voyages

Consistent with the VGP, the final rule exempts from the numeric ballast water discharge standard vessels that travel no more than 10 NM and do not pass through any locks during their voyages. 40 CFR 139.10(d)(3)(iv). These vessels (*e.g.,* cross-river ferries) contribute insignificantly to the introduction and dispersal of ANS; however, the implementation of BMPs for these short-voyage vessels is intended to minimize the contribution of ANS that the vessels could cumulatively have in a region. Exempting these vessels also helps minimize other non-water quality environmental impacts, a consideration for setting technology-based standards (*See* 40 CFR 125.3(d)(3)) that may result from the operation of BWMSs, including increased energy usage and increased carbon emissions. Further, many existing BWMSs use biocides that require a minimum contact time to be effective. Short distance voyages may not provide the time necessary for biocides to be effective. In fact, the discharge of ballast water treated with biocides may contain residuals or byproducts from that treatment, and short voyage times may not permit adequate decay or neutralization.

v. Vessels That Operate Exclusively in the Laurentian Great Lakes

The final rule exempts all Lakers from the numeric ballast water discharge standard. 40 CFR 139.10(d)(3)(vi). As required by the VIDA, EPA assessed whether a technology exists that is technologically available and economically achievable. EPA determined that the ballast water numeric standard for the Lakers is infeasible because the same challenges that were identified and analyzed in the VGP remain true today. EPA has decided to retain the VGP's exemption for Lakers from the numeric ballast water discharge standard. Specifically, this exemption is based on a set of unique circumstances, as described in the proposed rule at section VIII.B.1.vi.E, *Vessels that Operate Exclusively in the Laurentian Great Lakes* (85 FR 67854, October 26, 2020), including issues related to the unique nature of the waters of the Great Lakes, including extremely low salinity and high levels of suspended solids, turbidity, icing, filamentous bacteria, and dissolved organic carbon from tannins and humic acid. These environmental conditions can clog filters and inhibit BWMS treatment effectiveness and pose unique challenges to Lakers because, unlike other vessels operating in challenging water conditions, Lakers cannot leave the Great Lakes and thus do not have the option to perform a ballast water exchange and saltwater flush under more favorable conditions. In addition, the operational profile (*e.g.,* short voyages) and design of these freshwater vessels (*e.g.,* uncoated ballast tanks and piping systems that cannot withstand corrosive ballast water treatment chemicals) are not conducive to certain BWMSs.

EPA acknowledges that this exemption is less stringent than the VGP; however, consistent with CWA section 312(p)(4)(D)(ii)(II), the Administrator may revise a standard of performance to be less stringent than an applicable existing requirement if the Administrator determines that a material technical mistake occurred or if information becomes available that was not reasonably available when the Administrator promulgated the initial standard of performance. EPA has concluded that it made such a material technical mistake in the VGP when it determined that the environmental conditions and operational limitations identified as the basis for excluding Lakers constructed prior to 2009 from the numeric ballast water discharge standard would not be a limiting factor for those constructed after 2009. Additionally, the universe of post-2009 Lakers subject to the VGP numeric ballast water discharge standard is all operating under a USCG compliance date extension. Those extensions, granted in accordance with 33 CFR 151.2036, are in lieu of practical implementation of the numeric discharge standard in 33 CFR 151.1511, and are based on a USCG determination that Lakers are subject to unique

challenges affected by vessel operations and system limitations.

The proposed rule identified four more limited, alternative regulatory BMP options for Lakers, including: (1) require installation, operation, and maintenance of a USCG type-approved BWMS as an equipment standard; (2) require filtration only; (3) require open lake exchange of highly turbid water taken up in river ports; and (4) exempt the use of a BWMS for certain voyages when the operational parameters of an installed BWMS cannot be met.

As described in section VIII.B.1.d.vii of this preamble, *New Laker Equipment Standard,* EPA did establish an equipment standard as a ballast water BMP, for any new Laker, as defined in this final rule, to install, operate, and maintain a BWMS that has been type-approved by the USCG. However, EPA does not have adequate data to demonstrate the engineering aspects for the application of the other three alternative technologies or practices to reduce discharges of organisms. As described in section VIII.B.1.d.vii of this preamble, *New Laker Equipment Standard,* consistent with section 903(g) of the VIDA, EPA established the Great Lakes and Lake Champlain Invasive Species Program in part to develop solutions for such issues for ballast water discharges from Lakers.

Because the Laker fleet represents a very small percentage of the worldwide market, limited time and resources have been devoted to advance BWMSs for Lakers or demonstrate that these systems work onboard Lakers. As a result, Laker owners have no alternative in selecting a commercially available system that would achieve the numeric ballast water discharge standard. EPA's research program is a collaborative strategy intended to drive the market for this technology given the small number of vessels.

Under CWA section 312(p)(4)(D)(i), EPA must review its discharge standards at least every five years and revise the standards as appropriate. If data and information become available that can be used to identify additional BAT approaches for Lakers, whether it is installation of technology or implementation of additional BMPs, EPA can propose updates to the discharge standard to reflect new BAT-based requirements in advance of the five-year review date. Such an update may address the entire universe of vessels that operate exclusively on the Great Lakes, or reasonably could consider the appropriateness of the identified technology or practices to the different segments of the Great Lakes fleet, such as among classes, types, and sizes and between new and existing vessels as provided for under the VIDA. EPA expects that the ballast water management research and development activities described under the Great Lakes and Lake Champlain Invasive Species Program may provide a sound basis for proposing new or updated standards in the future.

Notwithstanding EPA's determination that, in the context of a technology-based standard, it is appropriate to exempt all Lakers from the numeric ballast water discharge standard, Congress also created a role under the VIDA for states to promulgate enhanced Great Lakes requirements by enacting a process, codified in CWA section 312(p)(10)(B), in which Governors of the Great Lakes states can work together to develop an enhanced standard of performance or other requirements with respect to any incidental discharge, including ballast water. In all cases where Great Lakes Governors petition for an enhanced requirement, EPA and USCG may only reject the proposed requirement if it is less stringent than existing standards or requirements under this section, inconsistent with maritime safety, or inconsistent with applicable maritime and navigation laws and regulations. The procedures for such a petition are identified in this rule at 40 CFR 139.51.

vi. Vessels in the USCG Shipboard Technology Evaluation Program (STEP)

Consistent with the VGP and USCG regulations at 33 CFR part 151 subpart D, the final rule exempts from the numeric ballast water discharge standard any vessel equipped with ballast tanks if that vessel is enrolled by the USCG in the Shipboard Technology Evaluation Program (STEP). 40 CFR 139.10(d)(3)(vii). The STEP will continue to play a critical role in the development of effective BWMSs, as with many other related or similar programs the USCG might implement in the future. The program has encouraged pioneering vessel operators to install BWMSs, contributed to the development of effective sampling methods, and allowed for the collection of valuable shipboard ballast water treatment data needed to evaluate the efficacy of BWMSs. Furthermore, the STEP is a venue for treatment vendors to develop and refine systems that comply with the numeric ballast water discharge standard and can be successfully approved through the USCG type-approval process, resulting in the availability of a greater range of systems for vessel owners. Vessels involved in the STEP use ballast water treatment technologies that share similarities in capabilities (and in many cases, are the same systems) as those described in the technical reports EPA used to inform the final rule. Therefore, the final rule exempts these vessels from meeting the numeric ballast water discharge standard as they are effectively using treatments systems that reflect BAT. Additionally, it would not be practicable for these vessels to simultaneously fulfill their purpose of testing BWMS to determine their effectiveness at meeting discharge standards while simultaneously requiring them to meet those discharge standards at all times.

vii. Vessels Discharging Ballast Water in the Same Location

Based on new information received in comments on the proposed rule, the final rule includes an additional exemption from the numeric ballast water discharge standard for discharges of ballast water at the same location where that ballast water originated, provided that no mixing with unmanaged ballast water and/or sediment from other areas has occurred. 40 CFR 139.10(d)(3)(v). Because such single-location ballast water by its nature could not be introducing ANS or other pollutants, EPA's view is that imposing numeric standards on this type of ballast water would not result in a greater level of pollution control. This exemption is consistent with the IMO BWM Convention Regulation A–3.5. If mixing has occurred, the ballast water taken from other areas is subject to the numeric ballast water discharge standard. This exemption is being added largely to allow for the practical reality of the operation of certain vessels, such as semi-submersible vessels, and how ballast water is used on such vessels. This exemption allows a vessel to discharge ballast water made up of managed ballast water from any location with unmanaged ballast water taken up and discharged in a single location. The residual ballast water transported between COTP Zones is subject to the numeric ballast water discharge standards and all ballast water BMPs apply. Specific ballast tank management requirements for vessels traveling between two COTP Zones and qualifying for this exemption would fall under the USCG's implementing regulations established under CWA section 312(p)(5).

viii. Discharges Prior to the Ballast Water Discharge Standard Compliance Date

The final rule includes an exemption providing that the ballast water discharge standard does not apply until

a given vessel's compliance date established pursuant to USCG regulations. 40 CFR 139.10(d)(3)(viii). This exemption is consistent with existing USCG procedures to address instances where the master, owner, operator, agent, or person in charge of a vessel can document that, despite all efforts, compliance with the numeric ballast water discharge standard is not possible. This exemption is also consistent with the VGP, where EPA acknowledged these procedures in its *Enforcement Response Policy for EPA's 2013 Vessel General Permit: Ballast Water Discharges and U.S. Coast Guard Extensions under 33 CFR part 151,* December 27, 2013 (U.S. EPA, 2013) whereby EPA would consider vessels operating under a Coast Guard extension letter pursuant to 33 CFR 151.2036 a low enforcement priority under the VGP.

g. Numeric Ballast Water Discharge Standard Compliance Dates

The final rule does not include compliance dates for the numeric ballast water discharge standard; rather, EPA expects the USCG to include such as part of its implementation, compliance, and enforcement rulemaking pursuant to CWA section 312(p)(5). EPA acknowledges and supports continuation of USCG procedures to address those cases where the master, owner, operator, agent, or person in charge of a vessel can document that, despite all efforts, compliance with the numeric ballast water discharge standard is not possible. The details of such vessel-specific requests would fall under the USCG's implementing regulations. For perspective, the existing USCG review considers safety and regulatory requirements of electrical equipment, vessel capacity to accommodate BWMS, vessel age, shipyard availability, or other similar factors and allowances are granted for no longer than the minimum time needed, as determined by the USCG, for the vessel to comply with the numeric ballast water discharge standard.

h. Ballast Water Exchange and Saltwater Flush

The final rule requires vessel operators to conduct a ballast water exchange or saltwater flush in certain instances. 40 CFR 139.10(e). The final rule codifies definitions of ''ballast water exchange,'' ''saltwater flush,'' and ''empty ballast tank'' from CWA section 312(p)(1) as these terms are used within the context of this section. 40 CFR 139.2.

The final rule, consistent with the provision in CWA section 312(p)(4)(B)(iii) that the requirements be no less stringent than the VGP, continues the interim ballast water management requirement for vessel operators, unless otherwise excepted from the requirement, to conduct ballast water exchange in lieu of treating ballast water prior to a vessel's compliance date for meeting the numeric ballast water discharge standard. 40 CFR 139.10(e). The interim ballast water exchange requirements in the final rule specify that before entering waters of the United States or waters of the contiguous zone, any vessel operating beyond the EEZ and with ballast water onboard that was taken within 200 NM of any shore must either meet the numeric discharge standard or conduct a midocean exchange further than 200 NM from any shore prior to discharging that ballast water in waters of the United States or waters of the contiguous zone. The exchange must occur as early as practicable in the voyage, so long as the exchange occurs more than 200 NM from shore. 40 CFR 139.10(e)(1). This requirement reduces the likelihood of the spread of ANS, prior to a numeric ballast water discharge standard compliance date, by increasing the mortality of living organisms in ballast tanks and ensuring that the discharge contains fewer viable living organisms.

The final rule, as directed by CWA section 312(p)(6)(B), expands ballast water exchange and saltwater flush requirements beyond those in the VGP and USCG regulations. Specifically, the final rule requires that vessels with empty ballast tanks bound for a port or place of destination subject to the jurisdiction of the United States shall, prior to arriving at that port or place of destination, conduct a ballast water exchange or saltwater flush of empty ballast tanks that carry unpumpable ballast water and residual sediments (or otherwise seal the tank so that there is no discharge or uptake and subsequent discharge of ballast water). Also, ballast water exchange or saltwater flush must occur no less than 200 NM from any shore for a voyage originating outside the United States or Canadian EEZ, or no less than 50 NM from any shore for a voyage originating within the United States or Canadian EEZ. 40 CFR 139.10(e)(2).

EPA notes that these saltwater flush requirements reflect a widely used, low-cost preventative approach that minimizes the risk that ANS will be introduced from unpumpable ballast water and residual sediment. A saltwater flush is most effective at eliminating organisms adapted to freshwater and low salinity environments due to the combined impacts of saltwater shock and physical dilution. However, a saltwater flush should also reduce viable living organisms adapted to estuarine, coastal, and marine environments. A saltwater flush reduces viable living organisms in residual ballast water through dilution. It also reduces organisms in resting stages in the residual sediment. Resting stages of organisms often inhabit the sediment in ballast tanks; thus, a reduction in the number of these organisms will likely reduce the propagule of potential invaders.

The final rule incorporates from CWA section 312(p)(6)(B)(ii) certain exceptions to the ballast water exchange or saltwater flush requirements for empty tanks, including: if the unpumpable residual waters and sediments of an empty ballast tank were treated by a USCG type-approved BWMS; except as otherwise required under this part, if the unpumpable residual waters or sediments of an empty ballast tank were sourced within the same port or place of destination or sourced within the contiguous portions of a single COTP Zone; if complying with an applicable requirement would compromise the safety of the vessel or is otherwise prohibited by any Federal, Canadian, or international law (including regulations) pertaining to vessel safety; and if the vessel is operating exclusively within the internal waters of the United States or Canada. 40 CFR 139.10(e)(3).

CWA section 312(p)(6)(B)(ii)(IV) includes one additional exception to the ballast water exchange or saltwater flush requirement: ''if design limitations of the vessel prevent a ballast water exchange or saltwater flush from being conducted'' in accordance with applicable requirements. The final rule at 40 CFR 139.10(e)(3)(iv) largely incorporates this exclusion but, consistent with the proposed rule, limits its applicability only to existing vessels, defined as a vessel constructed prior to the date identified in the forthcoming USCG implementing regulations as described in 40 CFR 139.1(e). EPA interprets the ''design limitation'' exclusion in the VIDA to apply only to existing vessels since the VIDA added permanent exchange requirements, presumably because of the added benefit in performing such an exchange. If the design exclusion applied to new vessels, it would undermine the purpose of the statutory ballast water exchange and saltwater flush requirements by disincentivizing the design and construction of new vessels that are capable of conducting an exchange or flush. It is critical that new vessels have the capability to conduct

ballast water exchange and a saltwater flush, even if they install a BWMS, particularly as a contingency measure if the treatment system fails to operate as expected. The VGP included an additional exception, except for vessels entering the Great Lakes or in federally-protected waters, for a vessel to not be required to deviate from its voyage, or delay the voyage to conduct a ballast water exchange or saltwater flush. However, CWA section 312(p)(6)(B)(ii) did not include such an exemption and as such the final rule does not allow this route deviation or delay exemption to the final rule's requirements implementing CWA section 312(p)(6)(B)(i).

i. Vessels Entering the Great Lakes

The final rule requires, based on CWA section 312(p)(10)(A), vessels entering the St. Lawrence Seaway through the mouth of the St. Lawrence River to conduct a complete ballast water exchange or saltwater flush (as appropriate) not less than 200 NM from any shore for a voyage originating outside the EEZ; or not less than 50 NM from any shore for a voyage originating within the EEZ. 40 CFR 139.10(f)(1). There are exceptions to these requirements, including if: the vessel has no residual ballast water or sediments onboard to the satisfaction of the USCG; empty tanks are sealed; or ballast water is retained onboard while operating in the Great Lakes. 40 CFR 139.10(f)(2)(iii) through (v). Consistent with the VGP and the VIDA's text, the final rule does not contain an exception for vessels that use a BWMS to treat the ballast water prior to discharge.

Part 2.2.3.7 of the VGP required vessels that operate outside the EEZ and more than 200 NM from any shore and then enter the Great Lakes through the St. Lawrence Seaway to conduct ballast water exchange or a saltwater flush in addition to treatment, if ballast water uptake occurred within the previous 30 days from a coastal, estuarine, or freshwater ecosystem with a salinity of less than 18 parts per thousand. EPA determined that this requirement of the VGP is not necessary to include in the final rule given that the VIDA statutory requirement is more restrictive than (and supersedes) that VGP requirement.

Consistent with the VIDA, the final rule expands the requirement for exchange or a saltwater flush plus treatment for vessels entering the Great Lakes through the St. Lawrence River to a larger universe of vessels, as compared to the VGP requirements and USCG regulations found at 33 CFR part 151. Specifically, the final rule at 40 CFR 139.10(f)(1) extends the exchange and saltwater flush requirements to ''any vessel,'' while the VGP and USCG requirements limited these requirements to vessels operating outside the EEZ and more than 200 nm from any shore and having taken on ballast water with a salinity of less than 18 parts per thousand within the previous 30 days. In 2014 and 2015, a total of 81 unique vessels arrived at U.S. ports in the Great Lakes from oversees on 131 voyages. Most of these voyages departed from European ports (82 percent). However, there are limited data on the salinity of the origination ports. Therefore, it is difficult to estimate the affected universe from higher salinity ports that are now required to do exchange plus treatment. However, many of these vessels may have been conducting exchange plus treatment prior to the compliance dates for these vessels to install a BWMS, to ensure compliance with the VGP. Consequently, there may be minimal impact on these vessels, and the requirement are expected to be technologically available and economically achievable for these vessels.

Existing USCG regulations at 33 CFR 151.1502 require that vessels, after operating on the waters beyond the EEZ during any part of their voyage, that enter through the St. Lawrence Seaway or that navigate north of the George Washington Bridge on the Hudson River, perform a ballast water exchange or saltwater flush regardless of other port calls in the United States or Canada during that voyage, except as expressly provided in 33 CFR 151.2015(a). In the final rule, EPA does not specifically identify this universe of vessels as having to perform a ballast water exchange or saltwater flush prior to entering the Hudson River or St. Lawrence Seaway, unless the vessel is meeting the numeric ballast water discharge standard (*e.g.,* has installed and is operating a USCG type-approved BWMS), as the final rule requires such ballast water exchange or saltwater flush for any vessels subject to the ballast water discharge standard. Therefore, while the final rule does not call out this universe of vessels specifically, similar requirements are being finalized for these and a larger universe of vessels.

Consistent with the CWA section 312(p)(10)(A)(ii)(I), the final rule includes exceptions to ballast water exchange or saltwater flush requirements for vessels entering the Great Lakes, if: (1) compliance would compromise the safety of the vessel; (2) compliance is otherwise prohibited by any Federal, Canadian, or international law (including regulations) pertaining to vessel safety; or (3) design limitations of an existing vessel prevent a ballast water exchange from being conducted. 40 CFR 139.10(f)(2)(i) and (ii). As described in section VIII.B.1.h. of this preamble, *Ballast Water Exchange and Saltwater Flush,* the final rule adds a limitation to the design exclusion to apply only to existing vessels, defined as a vessel constructed prior to the date identified in the forthcoming USCG implementing regulations, as described in 40 CFR 139.1(e). This limitation is important to prevent the design and construction of new vessels that cannot conduct an exchange or flush. It is critical that new vessels entering the Great Lakes have this capability, even if they install a BWMS, particularly as a contingency measure if the treatment system fails to operate as expected.

j. Pacific Region

The VIDA establishes more stringent Pacific Region requirements for ballast water exchange than were required under the VGP. The final rule requires, as dictated by CWA section 312(p)(10)(C), that any vessel that operates either between two ports within the U.S. Pacific Region or between ports in the Pacific Region and the Canadian or Mexican Pacific Coast north of parallel 20 degrees north latitude, inclusive of the Gulf of California, conduct a complete ballast water exchange in waters more than 50 NM from shore. 40 CFR 139.10(g)(1). The term ''Pacific Region'' includes the entire EEZ adjacent to the states of Alaska, California, Hawaii, Oregon, and Washington. 33 U.S.C. 1322(p)(1)(S). There are exceptions in the VIDA to these exchange requirements, including if the vessel is using a type-approved BWMS or for voyages between or to specific ports in the states of Washington, Oregon, California, Alaska, and Hawaii, and the Port of Los Angeles, the Port of Long Beach, and the El Segundo offshore marine oil terminal, if the ballast water originated from specified areas. 33 U.S.C. 1322(p)(10)(C)(ii)(II).

As specified in the VIDA, and codified in 40 CFR 139.10(g)(2), the final rule requires that any vessel that transports ballast water sourced from low salinity waters (less than 18 parts per thousand) and voyages to a Pacific Region port or place of destination with low salinity must conduct a complete ballast water exchange. The exchange must occur not less than 50 NM from shore, if the ballast water was sourced from a Pacific Region port; or more than 200 NM from shore, if the ballast water was not sourced from a Pacific Region port. These exchange requirements do

not apply to any vessel voyaging to the Pacific Region that is using a type-approved BWMS that achieves standards of performance for low salinity water that are more stringent than the existing VGP and USCG numeric ballast water discharge standards. The low salinity water standards of performance as specified in CWA section 312(p)(10)(C)(iii)(II) are:

- Less than 1 organism per 10 cubic meters, if that organism (1) is living or has not been rendered nonviable; and (2) is 50 or more micrometers in minimum dimension;
- Less than 1 organism per 10 milliliters, if that organism (1) is living or has not been rendered nonviable; and (2) is more than 10, but less than 50, micrometers in minimum dimension; and
- Concentrations of indicator microbes that are less than (1) 1 colony-forming unit of toxicogenic *Vibrio cholerae* (serotypes O1 and O139) per 100 milliliters or less than 1 colony-forming unit of that microbe per gram of wet weight of zoological samples; (2) 126 colony-forming units of *Escherichia coli* per 100 milliliters; and (3) 33 colony-forming units of intestinal enterococci per 100 milliliters.

The final rule corrects a typographical error from the proposed rule regulatory text that indicated a discharge standard of less than 1 organism per 100 milliliters (rather than the correct value of 1 organism per 10 milliliters) for organisms more than 10, but less than 50, micrometers in minimum dimension. The proposed rule preamble text reflected the correct value, which is carried forward into this final rule.

As established by the VIDA, the final rule at 40 CFR 139.10(g)(3) exempts vessels from the Pacific Region requirements if any of the following conditions exist: (1) compliance would compromise the safety of the vessel; (2) design limitations of an existing vessel prevent a ballast water exchange from being conducted; (3) the vessel has no residual ballast water or sediments onboard to the satisfaction of the Secretary, or the vessel retains all ballast water while in waters subject to the requirement; or (4) empty ballast tanks on the vessel are sealed in a manner that ensures that no discharge or uptake occurs and that any subsequent discharge of ballast water is subject to the requirement. As described in the previous ballast water exchange sections, the final rule limits the design exclusion only to existing vessels, defined as a vessel constructed prior to the date identified in the forthcoming USCG implementing regulations, as described in 40 CFR 139.1(e) and only as determined by the USCG. This limitation is important to prevent the design and construction of new vessels that cannot conduct an exchange or flush as an alternative ballast water management option for those instances when, for example, an installed BWMS fails to operate as expected.

As compared to the VGP, the VIDA expanded requirements for the Pacific Region to include exchange or more stringent treatment for low salinity waters. Except for any vessel that transports low salinity ballast water (less than 18 ppt) and voyages to a low salinity Pacific Region port or place of destination, the final rule requirement to conduct ballast water exchange in the Pacific Region is an interim requirement until a vessel installs a type-approved BWMS that meets the ballast water discharge standard. As specified in CWA section 312(p)(10)(C)(iii), any vessel that transports low salinity ballast water (less than 18 ppt) and voyages to a low salinity Pacific Region port or place of destination must continue to conduct a complete ballast water exchange, unless it has installed a type-approved BWMS that achieves standards of performance, depending on the parameter, up to 100 times more stringent than the existing discharge standard. *Id.* (p)(10)(C)(iii)(II). Currently, there is not a USCG type-approval process for BWMSs to demonstrate the ability to achieve this more stringent standard. Therefore, vessels from low salinity waters must continue to conduct exchange until such a process is developed and BWMSs are approved to meet that more stringent standard.

For the most part, the continental shelf along the Pacific coast is narrow along both North and South America. Deep water environments beyond the continental shelf typically support ecosystems that are quite different than those which exist closer to shore. Due in part to the narrow width of the continental shelf and relatively deep waters beyond 50 NM from the Pacific shore, exchange at this distance from the Pacific shore will be effective.

In addition, the VIDA described the applicability of the Pacific Region exchange requirements differently as compared to the VGP. The final rule implements the VIDA requirements as established by Congress in the statute rather than as written in the VGP. The VGP required exchange for vessels on nearshore voyages that carry ballast water taken on in areas less than 50 NM from any shore. It defined nearshore voyages as those vessels engaged in coastwise trade along the U.S. Pacific coast operating in and between ports in Alaska, California, Oregon, and Washington that travel between more than one COTP Zone. The VIDA did not include the stipulation that a vessel voyage must be between more than one COTP Zone. In addition, the VIDA includes vessels operating in ports in the State of Hawaii, with certain exceptions, in the exchange requirements that the VGP did not include. The VGP required exchange for all other vessels that sail from foreign, non-U.S. Pacific, Atlantic (including the Caribbean Sea), or Gulf of Mexico ports, that do not sail further than 200 NM from any shore, and that discharge or will discharge ballast water into the territorial sea or inland waters of Alaska or off the west coast of the continental United States. The VIDA did not identify nearshore voyages from outside of the Pacific Region EEZ (although it did include parts of Canada and Mexico) as being required to conduct exchange.

2. Bilges

Bilgewater consists of water and pollutant residues, such as oil, grease, and metals, that accumulate in the vessel's bilge (the lowest compartment of the vessel). The source of bilgewater is typically drainage from interior machinery, engine rooms, pipes, and decks. Bilgewater contains both conventional and toxic pollutants including oil, grease, volatile and semi-volatile organic compounds, inorganic salts, and metals. Volumes vary with the size of the vessel and discharges typically occur several times per week. Cruise ships have been estimated to generate 25,000 gallons of bilgewater per week for a 3,000 passenger/crew vessel (U.S. EPA, 2008). Bilgewater treatment technologies can be used to remove pollutants from bilgewater. For example, ultrafiltration can be effective in removing turbidity and suspended solids, organic carbon, and several trace metals (such as aluminum, iron, and zinc) from bilgewater, in addition to oil (Tomaszewska et al., 2005).

Under MARPOL Annex I, all ships of 400 GT and above are required to have equipment installed onboard that limits the discharge of oil to less than 15 parts per million (ppm) when a ship is underway. All vessels of 400 GT and above are also required to have an oil content monitor (OCM), including a bilge alarm, integrated into the piping system. In the United States, MARPOL is primarily implemented by APPS (33 U.S.C. 1901 *et seq.*). The USCG's implementing regulations for APPS are primarily found at 33 CFR part 151 and prohibit ''any discharge of oil or oily mixtures into the sea from a ship'' except when certain conditions are met,

including a discharge oil content of less than 15 ppm and that the ship operates oily water separating equipment, a bilge monitor, a bilge alarm, or a combination thereof. Additional regulations found at 46 CFR part 162 detail the approval procedures. Approval is based on testing of manufacturer-supplied oil pollution control equipment by an independent laboratory, in accordance with test conditions prescribed by the USCG (33 CFR parts 155 and 157 and 46 CFR part 162). Additionally, as appropriate, the discharge of bilgewater also must comply with related requirements in 33 CFR part 151, 40 CFR part 110, and 46 CFR part 162. Except as expressly provided, the final VIDA regulations do not affect the applicability of these other Federal laws to a vessel.

To develop the bilgewater standard, EPA considered whether increased stringency for the numeric discharge standard for oil content might have been appropriate and elected to request specific information on the matter. Specifically, EPA sought information from commenters regarding the availability of type-approved systems capable of meeting a 5 ppm numeric discharge standard for oil, as well as the availability and cost of OCMs that can accurately determine oil content at 5 ppm or lower detection levels. The majority of commenters responding to these queries indicated that systems capable of meeting a 5 ppm standard may not be widely available or reliable once installed onboard. Concerns regarding reliability were largely tied to OCM issues; namely, that their functionality can easily be disrupted and that measurements often differ from analytical results. Commenters were generally in agreement that the existing 15 ppm standard under APPS regulations is appropriate and that equipment is reliable to achieve this standard. None of the comments received provided specific information about OCMs or their cost. Because no information was provided by commenters that affirmatively demonstrates the availability and affordability of systems consistently and demonstrably meeting a 5 ppm standard, EPA is not establishing any new enhanced system requirements. In the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.2.), EPA explained that the VGP requirement for vessel operators to meet a discharge limit for oil of 15 ppm or to not discharge oil in quantities that may be harmful was consistent with the proposed general discharge standards for oil management. EPA also did not want to be redundant to existing requirements under the APPS. As such, the proposed rule did not explicitly identify the 15 ppm oil content limit in the proposed bilges regulations, despite discussing this limit at length in the preamble. However, one commenter expressed confusion that the numeric limit from the VGP was missing. Based on its consideration of comments, EPA determined that it is appropriate and clearer to include the 15 ppm directly in the regulatory standard. This approach is consistent with the VGP and existing regulations and, as discussed in the preambles of both the proposed rule and this final rule, EPA determined that available systems are capable of meeting this numeric standard and it is an existing practice. Therefore, 40 CFR 139.11(c) requires that the oil content of any bilgewater discharges from any vessel of 400 GT and above must not exceed 15 ppm.

The final rule at 40 CFR 139.11 maintains the same requirements included in the proposed rule and includes one additional requirement based on comments received during the public comment period. Consistent with the proposed rule, the final rule incudes both general and specific standards for bilgewater, detailed in 40 CFR part 139, subparts B and C, respectively. The general standards require vessels to minimize discharges and prohibit the discharge of oil in such quantities as may be harmful. The specific standards in the final rule require that the discharge of bilgewater must not contain any flocculants or other additives except when used with an oily water separator or to maintain or clean equipment. The use of any additives to remove the appearance of a visible sheen is also prohibited. 40 CFR 139.11(b).

EPA proposed to require all vessels of 400 GT and above to discharge treated bilgewater when underway but allowed such discharges to occur any distance from shore, except in federally-protected waters. The VGP, on the other hand, required vessels greater than 400 GT *that regularly sail outside the territorial sea (i.e., at least once per month)* to discharge treated bilgewater while underway *and, if technologically feasible, at least 1 NM from shore* (emphases added). EPA retained the requirement to discharge while underway, as discharging while underway is advantageous because it promotes dilution of the discharge and should be available to all vessels of 400 GT and above. EPA proposed, however, to broaden the applicability of the requirement to all vessels of 400 GT and above, and not just those vessels greater than 400 GT that regularly sail outside the territorial sea. EPA proposed this new approach because it learned that the VGP requirement was difficult to implement and led to confusion about whether and when a vessel may be authorized to discharge treated bilgewater when not underway, particularly as it related to determining when a vessel would be considered to ''regularly'' sail outside the territorial sea. While EPA proposed to remove the discharge prohibition within 1 NM, commenters disagreed with its removal and EPA has concluded that the Agency does not have a basis for being less stringent than the VGP in this case that would be consistent with the exceptions laid out in CWA section 312(p)(4)(D)(ii)(II). As such, the final rule requires that bilgewater discharges from any vessel of 400 GT and above occur when the vessel is underway with an oil content that does not exceed 15 ppm and, if technologically feasible, at least 1 NM from shore. 40 CFR 139.11(c). Such vessels have the capability, in terms of process and engineering, to adjust the timing and location of bilgewater discharges and EPA does not expect this approach to impose any significant additional cost burden as some vessels were subject to this requirement under the VGP. Additionally, EPA found that more than 99.7 percent of vessels 400 GT and above did not discharge any bilgewater under the VGP, based on information from the annual reports for the 2019 operating year.

Finally, as noted above and as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule requires additional controls for bilgewater discharges from a vessel operating in federally-protected waters. 40 CFR 139.40(c).

3. Boilers

Boiler blowdown is the discharge of water and constituents from the boiler during regular intervals to avoid concentration of impurities and at intermittent intervals for cleaning or other purposes. Boiler blowdown occurs on vessels with steam propulsion or a steam generator to control anti-corrosion and anti-scaling treatment concentrations and to remove sludge from boiler systems. Routine blowdown involves releasing a volume of about one to 10 percent of the water in the boiler system to manage the accumulation of solids and buildup of dissolved solids in the boiler water. Frequency of required blowdown varies, typically between once every two weeks

to once every few months, although on some vessels blowdown may be as frequent as daily or even continuously. The constituents of boiler blowdown discharge vary according to the types of feed water treatment used, but may include toxic pollutants such as antimony, arsenic, cadmium, copper, chromium, lead, nickel, selenium, thallium, zinc, and bis (2-ethylhexyl) phthalate.

EPA was unable to identify new technology or best management practice options for discharges from boilers. Therefore, the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements, and the fact that the VGP requirements are currently in effect, to require substantively the same requirements included in the VGP. 40 CFR 139.12. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule requires that the discharge of boiler blowdown be minimized when in port. This requirement acknowledges that blowdown typically must be performed as necessary and that while the amount of blowdown can often be minimized, the timing of such blowdown, in many instances, cannot be safely changed, such as to only those times when a vessel is not in port. As such, this requirement is more specific to a location (when in port) than the general operation and maintenance requirements described in subpart B, for vessel operators to minimize discharges of blowdown to only those times when necessary and to discharge while the vessel is underway when practical and as far from shore as practical. To comply with the requirements of the VGP, vessels greater than 400 GT were adjusting the timing and location of blowdown events. EPA has determined that all vessels subject to the rule can similarly change the timing and location of their blowdown events as necessary to minimize the discharge. This will reduce the discharge of various pollutants but will not impose any significant additional cost burden.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule prohibits the discharge of boiler blowdown into federally-protected waters. 40 CFR 139.40(d).

4. Cathodic Protection

Cathodic protection systems are used on vessels to prevent steel hull or metal structure corrosion. The two types of cathodic protection are galvanic (*i.e.,* sacrificial anodes) and impressed current cathodic protection (ICCP). Galvanic cathodic protection uses anodes, typically made of magnesium, zinc, or aluminum, that are ''sacrificed'' to the corrosive forces of the seawater, which creates a flow of electrons to the cathode, thereby preventing the cathode (*e.g.,* the hull) from corroding. With ICCP, a direct current is passed through the hull such that the electrochemical potential of the hull is sufficiently high to prevent corrosion. The ICCP system releases oxidants during the process, generally consisting of chlorinated and brominated substances from the reaction with seawater. The discharge from either method of cathodic protection is continuous when the vessel is waterborne. However, galvanic protection discharges include both toxic and nonconventional pollutants such as ionized zinc, magnesium, and aluminum.

EPA was unable to identify new technology or best management practice options for discharges resulting from cathodic protection, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP with slight modification based on comments received on the proposed standards. 40 CFR 139.13.

The final rule requires that any spaces between flush-fit anodes and the backing must be filled, because niche areas on the hull are more susceptible to biofouling and more difficult to clean. Additionally, the general operation and maintenance requirements described in subpart B require that any materials used onboard that are subsequently discharged be used only in the amount necessary to perform their intended function, including any sacrificial anodes. Therefore, sacrificial anodes must not be used more than necessary to adequately prevent corrosion of the vessel's hull, sea chest, rudder, and other exposed vessel areas.

EPA proposed to not carry forward a requirement from the VGP regarding the selection of sacrificial anode systems based on toxicity of the anode, though the proposed rule preamble did note that the Agency continues to support operators considering toxicity during selection. As described in the preamble of the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.4), EPA received new information from its implementation of the VGP that this requirement was not technologically feasible and/or economically practicable and achievable in many instances. Based on a commenter's suggestion to continue this concept through a BMP encouraging anode selection based on toxicity, however, the final rule includes a requirement to consider selection of anode materials based on toxicity of the base metal. 40 CFR 139.13(c). At the same time, the requirement to consider, but not necessarily select, the least toxic metal acknowledges that the type of anode metal selected based on toxicity (magnesium, then aluminum, then zinc) may not be technologically feasible and/or economically practicable and achievable in all instances. For example, in harbors or estuaries with high pollutant loads, zinc is the preferred anode material for vessels that spend time in those waters because of concerns with pollutants causing aluminum anodes to passivate and lose effectiveness.

EPA did consider requiring use of ICCP because these systems eliminate or reduce the need for sacrificial anodes. However, there is a risk of overprotecting using these systems (*e.g.,* embrittlement in high-strength vessels) or debonding of protective coatings, and these systems generally should only be installed on vessels that are manned full-time by a highly skilled crew able to carefully monitor and maintain these systems. As such, the Agency recommends, but does not require, that operators consider the use of ICCP in place of, or to reduce the use of, sacrificial anodes when technologically feasible (*e.g.,* adequate power sources, appropriate for vessel hull size and design), safe, and adequate to protect against corrosion, particularly for new vessels.

5. Chain Lockers

Chain lockers are the storage area onboard for housing the vessel's anchor and chain. Water, sediment, biofouling organisms, and contaminants can enter and accumulate in the chain locker during anchor retrieval and precipitation events. The accumulation of water and other materials in the chain locker is often referred to as the chain locker effluent. This effluent can contain both conventional and nonconventional pollutants including biological organisms and residue from the inside of the locker itself, such as rust, paint chips, grease, and zinc. The sump collects these liquids and materials that enter the chain locker prior to discharge or disposal.

EPA was unable to identify new technology or best management practices options for discharges from chain lockers, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same

requirements included in the VGP. 40 CFR 139.14.

The final rule requires that vessel operators implement BMPs that would reduce or eliminate chain locker effluent discharge. Based on comments received on the proposed rule, the final rule clarifies that the chain locker requirements apply to accumulated biological organisms and sediment in addition to precipitation and seawater, and that such requirements are intended to prevent the discharge of accumulated biological organisms, sediment, precipitation, and seawater when deploying the anchor in a new port or place of destination. 40 CFR 139.14(a).

The final rule also requires that vessel operators rinse the anchor chain of biofouling organisms and sediment when the anchor is retrieved. 40 CFR 139.14(b). Additionally, the final rule prohibits the discharge of biological organisms, sediment, precipitation, and seawater from any chain locker when the vessel is in port. 40 CFR 139.14(c).

For all vessels that operate beyond the waters of the contiguous zone, the final rule requires anchors and anchor chains to be rinsed of biofouling organisms and sediment prior to entering the waters of the contiguous zone. 40 CFR 139.14(d). This requirement is intended to minimize the discharge of biofouling organisms when vessels that operate beyond waters of the contiguous zone re-enter these waters and subsequently drop anchor in waters of the United States or waters of the contiguous zone. Based on comments received on the proposed rule, the final rule at 40 CFR 139.14(d) clarifies that this requirement may be satisfied by rinsing when the anchor is retrieved at the commencement of the voyage or when the anchor was last retrieved on a previous voyage, so long as the rinsing occurs after the last use of the anchor beyond waters of the contiguous zone.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule prohibits any discharge of accumulated biofouling organisms, water, and sediment from any chain locker into federally-protected waters. 40 CFR 139.40(e).

6. Decks

Deck discharges may result from deck runoff, deck washdown, or deck flooding. Deck runoff consists of rain and other precipitation or condensation, as well as freshwater and seawater, that sprays or washes over the deck, well decks, and bulkhead areas. Deck washdowns consist of cleaners and freshwater or saltwater. Deck flooding generally consists of seawater from the flooding of a docking well (well deck) on a vessel used to transport, load, and unload amphibious vessels, or freshwater from washing the well deck and equipment and vessels stored in the well deck. Deck washdown, runoff, and flooding discharges include those from all deck and bulkhead areas and associated equipment. The constituents and volumes vary widely depending on a vessel's purpose and practices and may include both conventional and nonconventional pollutants such as oil, grease, fuel, cleaner or detergent residue, paint chips, paint droplets, and general debris. Based on comments received on the proposed rule, the final rule provides additional clarification on the list of deck discharges identified in the proposed rule to also include condensation, seawater spray and washover, flooding, and waters pumped from below deck on a barge, all of which are also covered under this section per 40 CFR 139.15(a).

The final rule also includes a new requirement at 40 CFR 139.15(h), consistent with Part 5.4.1. of the VGP, to clarify that barges which discharge water pumped from below deck must minimize the contact of below deck condensation with oily or toxic materials and any materials containing hydrocarbon.

EPA was unable to identify new technology or best management options for discharges from decks, therefore the Agency relied on the BAT analysis underlying the VGP. 40 CFR 139.15. EPA received comments requesting clarification on the proposed requirements for decks; therefore, the final deck discharge standards are similar to the proposed standards but include additional clarifications.

EPA determined that these BMPs are necessary to carry out the intent of this subsection of the VIDA and because it is infeasible to set a specific numeric discharge standard for discharges from decks and well decks due to the variation in vessel size and associated deck surface area, the types of equipment operated on the deck, limitations on space for treatment equipment, as well as the nature of the discharge. As such, the final rule includes BMPs to minimize the volume of discharges and various pollutants from decks. The final rule requires vessel operators to properly maintain the deck and bulkhead areas to keep the deck clean; prevent excess corrosion, leaks, and metal discharges; contain potential contaminants to keep them from entering the waste stream; and use minimally toxic, phosphate-free, and biodegradable products. Properly maintaining the deck includes the use of coamings or drip pans for machinery on the deck that is expected to leak or otherwise release oil, so that any accumulated oils from these areas can be collected and managed appropriately per 40 CFR 139.15(b).

The final rule also requires that, prior to performing a deck washdown and when underway, exposed decks must be kept broom clean to remove existing debris and prevent the introduction of garbage or other debris into any waste stream. 40 CFR 139.15(e). As defined in 40 CFR 139.2, ''broom clean'' means a condition in which the deck shows that care has been taken to prevent or eliminate any visible concentration of surface residues. In response to comments received on the proposed rule, EPA is clarifying that broom cleaning is intended as a BMP to address residues. Spills may be more appropriately addressed through other BMPs in this section, such as coamings, drip pans, and other control measures. *See* 40 CFR 139.15(b). Similarly, control measures must be used to minimize the introduction of on-deck debris, garbage, residue, spills, floating solids, visible foam, halogenated phenolic compounds, dispersants, and surfactants into deck washdown and runoff. 40 CFR 139.15(d). During deck washdown, the final rule requires that the washdown be conducted with minimally-toxic, phosphate-free, and biodegradable soaps, cleaners, and detergents. 40 CFR 139.15(g). The final rule also requires that discharges from deck washdowns be minimized in port. 40 CFR 139.15(f). Lastly, the final rule requires that, where applicable by an international treaty or convention or the Secretary, a vessel must be fitted with and use physical barriers (*e.g.,* spill rails, scuppers, and scupper plugs) during any washdown to collect runoff. 40 CFR 139.15(c). While applicable to any discharge addressed in this rule, due to the nature of deck discharges, EPA emphasizes that deck discharges must also meet any other applicable discharge requirements under this rule, including but not limited to the general discharge standards for general operation and maintenance and oil management detailed in subpart B.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule prohibits the discharge of deck wash from all vessels into federally-protected waters except those vessels that operate exclusively within the boundaries of federally-protected waters. 40 CFR 139.40(f). This prohibition is applicable

only to deck washdown and is not applicable to other deck runoff such as from precipitation or condensation. The final rule exempts vessels operating exclusively within federally-protected waters to address new information provided by commenters and concerns regarding necessary maintenance of these vessels that requires deck washdown.

7. Desalination and Purification Systems

Distilling and reverse osmosis plants, also known as water purification plants or desalination systems, generate freshwater from seawater for a variety of shipboard applications. These include potable water for drinking, onboard services (*e.g.,* laundry and food preparation), and high-purity feedwater for boilers. The wastewater from these systems is essentially concentrated seawater with the same constituents of seawater, including dissolved and suspended solids and metals; however, anti-scaling, anti-foaming, and acidic treatments and cleaning compounds are also injected into the distillation system and can be present in the discharge. As such, the wastewater can contain toxic, conventional, and nonconventional pollutants.

EPA was unable to identify new technology or best management practice options for discharges from desalination and purification systems, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.16. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule prohibits discharges resulting from the cleaning of desalination and purification systems with hazardous or toxic materials. 40 CFR 139.16(b).

8. Elevator Pits

Most vessels with multiple decks are equipped with elevators to facilitate the transportation of maintenance equipment, people, and cargo between decks. A pit at the bottom of the elevator collects liquids and debris from elevator operations. The liquid and debris that accumulates in the pits, often referred to as elevator pit effluent, can be emptied by gravity draining, discharged using the firemain, transferred to the bilge, or containerized for onshore disposal. The effluent may contain toxic, conventional, and nonconventional pollutants such as oil, hydraulic fluid, lubricants, cleaning solvents, soot, and paint chips.

EPA was unable to identify new technology or best management practice options for discharges from elevator pits, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP with slight modifications for clarity. 40 CFR 139.17. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule prohibits the discharge of untreated accumulated water and sediment from any elevator pit. 40 CFR 139.17(b).

9. Exhaust Gas Emission Control Systems

Exhaust gas emission control systems for reducing sulfur oxides (SO_X) and nitrogen oxides (NO_X) in marine exhaust can produce washwater and residues that must be treated or held for shoreside disposal. Two such systems are exhaust gas cleaning systems (EGCSs) and exhaust gas recirculation (EGR) systems.

An EGCS is used primarily to remove SO_X from marine exhaust. Commonly referred to as ''scrubbers,'' these systems capture contaminants that can end up in washwater and residue that result from the scrubbing process. EGCS washwater is typically treated and discharged overboard. Residues are usually disposed of onshore once the vessel is in port. Untreated EGCS washwater is more acidic than the surrounding seawater, and it contains toxic, conventional, and nonconventional pollutants including sulfur compounds, polycyclic aromatic hydrocarbons (PAHs), and traces of oil, NO_X, heavy metals, and captured particulate matter. Use of an EGCS to scrub emissions of SO_X reduces the pH significantly, primarily through the formation of sulfuric acid. The high volume of seawater that some vessels pump for the scrubbing process can result in higher turbidity in surrounding waters, particularly in shallow areas.

The use of scrubbers on vessels is in large part an outgrowth of international treaties for reducing sulfur emissions from marine exhaust. Under MARPOL Annex VI, to which the U.S. is a signatory, the highest permissible sulfur content of marine fuel used on a vessel when operating globally is 0.5 percent while the allowable fuel sulfur content for fuel used on a vessel operating in Emission Control Areas (ECAs) is restricted to 0.1 percent as of January 2015. In addition, MARPOL Annex VI includes three tiers of NO_X emission standards, where applicability is based on when the keel of a vessel is laid; the most stringent Tier III NO_X limits apply to any engine while operated in a NO_X ECA. There are two ECAs relevant to the United States: the North American ECA and the U.S. Caribbean Sea ECA. Both of these ECAs are for sulfur, particulate matter, and NO_X emissions, and the requirements apply to all ships while operating in those areas. The 0.1 percent sulfur limit for marine fuel sulfur content has been in effect since 2015 for ships operating in the U.S. ECAs. These ECA requirements also apply to certain internal waters (ECA associated areas) through regulatory action.

Use of an EGCS is an equivalent method to comply with the MARPOL Annex VI fuel sulfur requirement as an alternative to costlier low sulfur fuels while operating in an ECA. Recent information from the International Council on Clean Transportation (ICCT, 2023) indicates that the classification society Det Norske Veritas (DNV) projects there will be over 5,000 scrubbers installed on vessels worldwide by 2025. A scrubber must meet the same sulfur emission limit as would be achieved using the relevant compliant fuel (ECA or global).

The EGCSs used on vessels, while a relatively recent development, are based on technologies that have been deployed for land-based systems for controlling smokestack emissions for years. This technology has transferred well to shipboard use for both new and existing vessels. EGCS technologies used on vessels to meet the MARPOL Annex VI fuel sulfur standards can be either ''dry'' or ''wet'' depending on whether they generate wastewater. Dry systems do not generate wastewater and hence are not subject to these final requirements. The two main wet EGCS technologies (*i.e.,* those systems that use either seawater or freshwater to scrub the exhaust) are open-loop and closed-loop systems. Open-loop systems remove the contaminants from marine exhaust by running the exhaust through seawater sourced from outside the vessel and then discharging the resulting washwater back out to sea. In contrast, closed-loop systems use freshwater and inject caustic soda to neutralize the exhaust. A small portion of the washwater is bled off and treated to remove suspended solids that are held for onshore disposal. While this design is not completely closed-loop, it can operate in zero discharge mode for a period. Hybrid scrubbers are systems that can operate either in open- or closed-loop mode. At sea, these hybrid systems typically operate in open-loop mode, whereas in nearshore waters, harbors, and estuaries, they operate in closed-loop mode.

EGR systems are used to reduce NO_X emissions in marine exhaust. Vessels often use EGR systems to achieve the mandatory Tier III NO_X emissions limits set out in MARPOL Annex VI. These systems minimize NO_X production by cooling part of the engine exhaust gas and then redirecting it back to the engine air intake. The addition of the recirculated engine exhaust reduces the amount of oxygen available for fuel combustion, reducing peak combustion temperatures and resulting in significantly reduced NO_X formation. The cooling of the recirculated exhaust gas causes condensation of water vapor formed during combustion, generating a continuous wastewater stream (bleed-off water) from the condensate. This condensate can contain toxic, conventional, and nonconventional pollutants such as particulates (soot, metals, and hydrocarbons) and sulfur. In some cases, the EGR systems also capture oils, for example from cylinder lubrication, that are emitted from the combustion process and collected as part of the scavenged air. Excess bleed-off water that accumulates in an EGR system is typically discharged overboard following treatment, and any residues are held for onshore disposal. On vessels that use high-sulfur fuel and an EGCS, the EGR system bleed-off water is often combined with the EGCS washwater and processed as a combined waste stream.

The final standard for EGCS in 40 CFR 139.18 is based largely on the IMO *2015 Guidelines for Exhaust Gas Cleaning Systems* (Resolution MEPC.259(68))(''2015 IMO EGCS Guidelines''), with additional updates consistent with the *2021 Guidelines for Exhaust Gas Cleaning Systems,* MEPC.340(77), adopted November 26, 2021 (''2021 IMO EGCS Guidelines''). The discharge provisions in both the 2015 and 2021 IMO EGCS Guidelines are largely identical to the 2009 IMO EGCS Guidelines (MEPC.184(59) that formed the basis of EPA's BAT determination for the 2013 VGP, as carried forward here. Section 10 of these Guidelines set out discharge limits for five parameters in scrubber washwater: pH, PAH, turbidity, nitrates plus nitrites, and additives, as well as handling and disposal criteria for scrubber residues. This standard applies to all discharges, upon commissioning and any subsequent/ongoing discharges. The final standard carries forward most of the EGCS requirements as proposed with the following three changes.

First, the 2021 IMO EGCS Guidelines added a new section 10.1.7 that clarified discharge criteria for any EGCS water retained in a temporary storage tank prior to discharge. For consistency with those international guidelines and to provide clarity on the applicability of the discharge criteria when water is retained prior to discharge, identical criteria (for pH, PAH, and turbidity) are included in the final rule. Based on the analysis and implementation of the 2021 IMO EGCS Guidelines, EPA finds this new requirement to represent BAT for the VIDA regulations.

Second, to align with the IMO EGCS Guidelines, the proposed rule had omitted the table from the VGP that specifies the nitrates plus nitrites limits at different flow rates. That table clarified how the limit varies depending on the discharge flowrates; however, the standard itself was already fully expressed in proposed rule text. Based on public comment noting that the table would help operators better understand the requirements, EPA added this table into the final rule at 40 CFR 139.18(b)(4)(i), acknowledging that addition of the table provides clarification but does not alter the requirements as proposed. Also, the final rule clarifies that the standards for PAH, turbidity, and nitrates plus nitrites apply downstream of the water treatment equipment including any reactant dosing unit but upstream of any seawater addition for pH control prior to discharge. EPA also incorporated concepts from the 2021 IMO EGCS Guidelines that were modified to provide more clarity on their application to the discharge standards, including clarification that megawatt (MW) refers to the Maximum Continuous Rating (MCR) or 80% of the power rating of all fuel oil combustion units whose discharge water is being monitored at that point.

Third, the final rule adds a new 40 CFR 139.18(b)(6) that clarifies the prohibition of discharges of sludge or residues generated from the treatment of EGCS or EGR washwater or bleed-off water. EPA added this requirement to the final rule to clarify the expectation of the proposed rule that treatment residuals are managed properly. This prohibition is consistent with both the 2021 IMO EGCS Guidelines and the VGP.

With respect to pH, several commenters requested additional detail and clarification on how the pH limit applies under the two different options in the standard. The first option is based strictly on the vessel's washwater discharge having a pH of no less than 6.5 at overboard discharge except during maneuvering and transit, when a maximum difference of two pH units is allowed between inlet water and overboard discharge. In that scenario, the following requirements apply:

- When stationary, the pH limit is 6.5; and
- During maneuvering and transit, a maximum difference of two pH units is allowed between inlet water and overboard discharge. So, during maneuvering and transit, if the pH of ambient (intake) water is, for example, 8.7, the pH limit is 6.7, or, if the ambient (intake) water is 8.0, the pH limit is 6.0.

The second option is modeling-based. Under this option, the vessel performs modeling to determine the pH at the overboard discharge point while the vessel is stationary that will not cause the ambient water at four meters from the hull to fall below a pH value of 6.5. For vessels that choose this option, the modeled value for pH of the overboard discharge then is the pH discharge limit at all times in all locations so that, for example, a modeled pH limit of 5.8 becomes the overboard discharge limit at all times, including while in port and during maneuvering and transit and for which there is no additional allowance of two pH units between uptake and discharge.

EPA also received several comments requesting that the Agency ban discharges from open-loop scrubbers outright (*i.e.,* establish a zero-discharge standard for open-loop scrubbers) as has been done in some other locations around the world. EPA received no information demonstrating that such a ban is technically available as a uniform national standard. For example, EPA has not received information demonstrating that there is sufficient low sulfur fuel (which may be needed to comply with emissions standards if scrubber discharges are not permitted) or that adequate onshore reception facilities are available for disposal of scrubber washwaters and residues that would be generated by the use of other scrubber configurations such as closed-loop or hybrid systems. Technical committees at the IMO are currently revisiting the need to perform additional assessments of environmental impacts from EGCS discharges, and EPA will continue to monitor the availability of research findings compiled in connection with these discussions.

Another commenter stated that EPA should have included use of shore power as an alternative to use of scrubbers; however, the use of shore power has many considerations and barriers (U.S. EPA, 2022). EPA recommended, but did not require, its use in the VGP. Currently, vessels use shore power when available, in part because that allows them to avoid the

turbidity issues associated with use of the EGCSs. However, shore power is often not an option in smaller ports due to load issues. EPA continues to recommend, but not require, the use of shore power when available and feasible for vessel use.

The final exhaust gas emission control standard also includes requirements for discharges of EGR bleed-off water and residues in recognition of the fact that these discharges can exhibit low pH and contain other toxic, conventional, and nonconventional pollutants covered under the CWA. The VGP did not identify EGR discharges largely because EGR systems are relatively new to vessels, consistent with the effect of the NO_X emissions standards established in MARPOL Annex VI. The final standard for discharges from EGR systems is based primarily on the IMO *2018 Guidelines for the Discharge of Exhaust Gas Recirculation (EGR) Bleed-Off Water* (MEPC 307(73))(''2018 IMO EGR Guidelines''), that is similar to the 2015 IMO EGCS Guidelines, with a few key differences that recognize the composition of EGR bleed-off washwater and the onboard process for handling this waste stream. EPA has utilized the analysis and implementation of the 2018 IMO EGR Guidelines to aid it in determining that its new EGR standards are technologically available and economically achievable.

The final rule carries forward most of the EGR requirements as proposed with some modifications or clarifications, based on public comment. For clarity, EPA revised the heading of 40 CFR 139.18(c) from the proposed rule to reflect an ''exclusion'' from the 40 CFR 139.18(b) requirements rather than a different ''applicability'' of the requirements.

As described in the proposed rule preamble (85 FR 67818, October 26, 2020, section VIII.B.9.), EPA proposed to apply this standard based on the location of the vessel, consistent with how the Agency assessed and applied other requirements in the rule; namely, the proposed standard considered whether a vessel was in port, underway, or outside of the waters of the United States or the waters of the contiguous zone. The proposed rule did not specify that the exclusion from the discharge standard in 40 CFR 139.18(b) only applies if the vessel is no longer in port; however, EPA did describe such in the proposed rule preamble. Thus, to be consistent with both EPA's intended approach and the 2018 IMO EGR Guidelines, the final rule clarifies that the EGR bleed-off exclusion from the 40 CFR 139.18(b) requirements only apply if the EGR bleed-off is not retained in a holding tank prior to discharge, and the vessel is no longer in port, is underway, and is operating on a fuel that meets the sulfur content limits specified in Regulation 14 of MARPOL Annex VI (that is, 0.10 percent mass by mass (m/m) sulfur content limit while operating in the North American or U.S. Caribbean Sea ECAs, as of January 1, 2015; 0.50 percent m/m fuel sulfur content limit while operating in other U.S. coastal areas as of January 1, 2020).

Comments on the proposed EGR requirements highlighted that the exclusion and prohibition in the proposed rule may not have been clear with respect to applicability of requirements based on type of fuel used and whether EGR discharges are retained in a holding tank prior to discharge. As such, the language in the final rule is restructured with a goal of clarifying those instances when EGR discharges are or are not subject to the 40 CFR 139.18(b) discharge standard and consistent with the 2018 IMO EGR Guidelines. Notably, for a vessel not operating on fuel that meets the sulfur content limits specified in Regulation 14 of MARPOL Annex VI, the final rule prohibits the discharge of EGR bleed-off retained in a holding tank prior to discharge unless the vessel is underway, not in port, and in compliance with the 40 CFR 139.18(b) discharge standard.

10. Fire Protection Equipment

Fire protection equipment includes all components used for fire protection including, but not limited to, firemain systems, sprinkler systems, extinguishers, and firefighting agents, such as foam. Firemain systems draw in water through the sea chest to supply water for fire hose stations, sprinkler systems, and firefighting foam distribution stations. Firemain systems can be pressurized or non-pressurized and are necessary to ensure the safety of the vessel and crew. The systems are also tested regularly to ensure that the system will be operational in an emergency. Additionally, firemain systems have numerous secondary purposes onboard vessels, such as for deck and equipment washdowns and anchor/anchor chain rinsing. However, whenever the firemain system is used for a secondary purpose, such as deck washdown, any resulting incidental discharge is required to meet the Federal standard of performance for that secondary use. Firemain water can contain a variety of constituents, including copper, zinc, nickel, aluminum, tin, silver, iron, titanium, and chromium. Many of these constituents can be traced to the corrosion and erosion of the firemain piping system, valves, or pumps.

Firefighting foams (fluorinated and non-fluorinated) can be added to a firemain system and mixed with seawater to address emergencies onboard a vessel. The constituents of firefighting foam can vary by manufacturer but can include persistent, bioaccumulative, toxic, and non-biodegradable ingredients. Discharges of firefighting foam can also contain phthalate, copper, nickel, and iron, which can be constituents in the composition of firemain piping. Fluorinated firefighting foam contains per- and poly-fluoroalkyl substances (PFAS) or their precursors; examples include aqueous film forming foam, alcohol resistant aqueous film forming foam, film-forming fluoroprotein foam, fluoroprotein foam, alcohol-resistant fluoroprotein foam, and other fluorinated compounds. Non-fluorinated firefighting foam does not contain PFAS or their precursors; examples include protein foam, alcohol-resistant protein foam, synthetic fluorine free foam, and synthetic alcohol-resistant fluorine free foam. PFAS such as perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA), among others, are persistent and bioaccumulative. Many PFAS are toxic and/or carcinogenic. Information regarding the presence of fluorinated surfactants and toxic or hazardous substances in firefighting foam are typically found on the safety data sheets for individual products. Additionally, other types of foams exist that can be used in fire equipment systems that are not intended for fire suppression but are designed for testing and training. These foams are often called testing or training foams, tend to be less expensive, and can mimic the properties of firefighting foams.

The final rule applies to discharges from fire protection equipment during testing, training, maintenance, inspection, or certification. 40 CFR 139.19(c). Based on comments received on the proposed rule, the final rule includes a definition for ''fire protection equipment'' and clarifies in 40 CFR 139.19(a) the applicability of the standards to discharges from the firemain for secondary uses such as deck washdown and anchor and anchor chain rinsing. Per 40 CFR 139.19(a), the final standard does not apply to the use of fire protection equipment in emergency situations or when compliance would compromise the safety of the vessel or life at sea. *See* 40 CFR 139.1(b)(3).

The final rule prohibits the discharge of fluorinated firefighting foam except

in instances when required by the USCG (*i.e.,* the Secretary) for certification and inspection or by the marine inspector to ensure vessel safety and seaworthiness. 40 CFR 139.19(b). The final rule clarifies that this includes activities performed pursuant to 46 CFR 31.10 through 31.18(c) and 46 CFR 107.235(b)(4), or otherwise required by the marine inspector to ensure vessel safety and seaworthiness (*e.g.,* pursuant to 46 CFR 31.10 through 31.17(a)(4), 46 CFR 71.25 through 71.50, 46 CFR 91.25 through 91.50, or similar). *Id.* The USCG has indicated that, in limited circumstances, USCG-required inspections and certification testing of vessels with fluorinated foam systems may result in discharges of fluorinated foam while in port to ensure vessel safety. In many instances, vessels with fluorinated foams can test, train, or maintain the system without discharging the foam, such as testing without foam, collecting the foam such that it is not discharged, or using an alternative non-fluorinated foam (FFFC, 2020; NFPA, 2016). According to the National Fire Protection Association (NFPA), there are many firefighting foams and training foams that are non-fluorinated that can be used for testing, training, and maintenance (FFFC, 2020; NFPA, 2016). Several commenters expressed support for the prohibition of discharges of fluorinated foam except as directed by the USCG. Commenters confirmed that in many instances testing, training, and maintenance can be performed with water unless USCG regulations require foam.

EPA also considered other more stringent requirements than the VGP in relation to the discharge of firefighting foam. Specifically, EPA explored requirements that would include product substitution to use firefighting foams that do not contain bioaccumulative or toxic or hazardous materials. EPA has used product substitution for other technology-based rules, such as those that apply to oil and gas. *See* 40 CFR part 435. As such, EPA considered, for the purposes of testing, training, maintenance, inspection, or certification, also prohibiting the discharge of non-fluorinated firefighting foams that contain bioaccumulative or toxic or hazardous materials (as identified in 40 CFR 401.15 or defined in 49 CFR 171.8). Based on the *Best Practice Guidance for Use of Class B Firefighting Foams* from the Fire Fighting Foam Coalition (FFFC, 2020), NFPA codes and standards—NFPA 11—*Standards for Low-, Medium-, and High-Expansion Foam* (NFPA, 2016), and discussions with the USCG, testing and training methods exist that limit or eliminate the need to discharge foam (FFFC, 2020; NFPA, 2016). Specifically, in many situations it may be possible to perform these activities by only using water (water equivalency method), collecting the foam, or using non-fluorinated training foam that does not contain bioaccumulative or toxic or hazardous materials. EPA reviewed numerous foam Safety Data Sheets for bioaccumulative or toxic or hazardous materials and identified several potential foam substitute options (U.S. EPA, 2020).

EPA solicited feedback on: (1) the availability of non-fluorinated foams, training foams, or surrogate test liquids that do not contain bioaccumulative or toxic or hazardous materials that can satisfy firefighting testing, training, and maintenance needs; (2) the extent to which vessels are already using these alternative foams; (3) the extent to which vessels are already performing testing, training, and maintenance using only water; (4) the number of vessels and types of systems that are not able to use the water-equivalency method; (5) the extent to which the vessel community is collecting foam prior to discharge; and (6) economic considerations associated with prohibiting the discharge of these types of non-fluorinated firefighting foams, and any other information that would support the Agency's determination of whether to expand the prohibition of the discharge of firefighting foams to include non-fluorinated foams that contain bioaccumulative or toxic or hazardous materials. Several commenters provided additional information on the solicited topics above, including materials demonstrating the limited availability of alternative foams and practical challenges associated with their use, such as the need for additional piping and onboard storage of multiple foam types. The input from commenters described above is consistent with the often limited information on bioaccumulation, toxicity, and hazardous substances found in Safety Data Sheets of foam formulations, as sections on environmental impact of chemicals are not mandatory (Appendix D to 29 CFR 1910.1200), and there is often omission or non-disclosure of information on presence and effects of persistent compounds (DEHP, 2016). EPA finds that it is not reasonable to require zero discharge of non-fluorinated foams that contain bioaccumulative or toxic or hazardous materials because the record does not demonstrate sufficient information and availability of alternative foams that meet requirements for testing, training, maintenance, inspection, or certification in all instances, as well as practical challenges with their use. EPA deems it appropriate to consider whether alternatives are readily available which meet requirements (*i.e.* consistently available on the market) (see CWA 304(b)(2)(B) authorizing EPA to consider ''such other factors as the Administrator deems appropriate''). Since the information does not support a finding that these products are readily available, EPA is not requiring zero discharge of non-fluorinated foams that contain bioaccumulative or toxic or hazardous materials. EPA may revisit this issue to determine whether a prohibition of certain types of discharge has become a practical option in the future.

EPA initially proposed to prohibit any discharge from fire protection equipment during testing, training, maintenance, inspection, or certification in port excluding USCG-required inspection or certification. However, several commenters expressed regulatory and safety concerns with this approach. These include inconsistencies with existing regulatory requirements for fire drills, such as in 46 CFR 199.180, as well as the inability to defer drills to outside of port in all instances. Several commenters also requested language analogous to the VGP that allows discharges in port if intake is from surrounding waters or potable water supplies and does not contain any additives or fluorinated firefighting foam. To address these concerns, the final rule allows for discharges in port from USCG-required inspection or certification activities to ensure vessel safety, as well as discharges from testing, training, maintenance, inspection, or certification activities if the intake is drawn from surrounding water or a potable water supply and does not contain additives. 40 CFR 139.19(c).

Several commenters also expressed concern over the lack of reference to secondary uses in the regulatory text. Some commenters interpreted the proposed regulations to prohibit secondary uses such as for deck washdown, anchor chain rinsing, and machinery cooling water. Commenters articulated that, as proposed, the standard would contradict the requirements in 40 CFR 139.14 requiring anchor and anchor chain washdown, as well as prevent vessel and deck washdown and necessary machinery cooling. Several commenters requested the addition of language similar to that in the VGP to allow discharges for secondary purposes

provided that the intake comes directly from the surrounding waters or potable water supplies, there are no additions to the water, and that the discharges meet the applicable standards for that secondary use. To clarify requirements for secondary uses, the final standard authorizes discharges from fire protection equipment in port for secondary uses (such as deck washdown or anchor and anchor chain rinsing) provided the intake is from surrounding water or a potable water source, does not contain additives, and the discharge meets requirements for the specific secondary use. 40 CFR 139.19(d).

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule requires additional controls for discharges from fire protection equipment for testing, training, and maintenance purposes for vessels operating in federally-protected waters. 40 CFR 139.40(g).

11. Gas Turbines

Gas turbines are used on some vessels for propulsion and electricity generation. Occasionally, they must be cleaned to remove byproducts that can accumulate and affect their operation. The byproducts and cleaning products can include toxic and conventional pollutants including salts, lubricants, combustion residuals, naphthalene, and other hydrocarbons. Additionally, due to the nature of the materials being cleaned, there is a higher probability of heavy metal concentrations. Rates and concentrations of gas turbine wash water discharge vary according to the frequency of washdown, and under most circumstances vessel operators can choose where and when to wash down gas turbines.

EPA was unable to identify new technology or best management practice options for discharges from gas turbines, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.20. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule prohibits the discharge of untreated gas turbine washwater unless determined to be infeasible. 40 CFR 139.20(b).

12. Graywater Systems

Graywater is water drained or collected from sources such as galleys, showers, baths, sinks, and laundry facilities. Graywater includes drainage from dishwater; however, the discharge of food waste and food waste derivates are regulated as garbage and are not incidental to the normal operation of a vessel. Therefore, they are not considered graywater for purposes of this rule. Graywater discharges can contain bacteria, pathogens, oil and grease, detergent and soap residue, metals (*e.g.,* cadmium, chromium, lead, copper, zinc, silver, nickel, mercury), solids, and nutrients. Some vessels have the capacity to collect and hold graywater for later treatment and discharge. Vessels that do not have graywater holding capacity continuously discharge it to receiving waters. It is estimated that 30 to 85 gallons of graywater is generated per person per day. Graywater generation rates per person can vary based on the types of activities onboard the vessel. For example, vessels with overnight accommodations and onboard leisure activities are expected to generate higher volumes of graywater than a working vessel because passengers and crew are using more water for bathing, food preparation, and other such activities (U.S. EPA, 2011d). Estimates of graywater generation by cruise ships that can accommodate approximately 3,000 passengers and crew range from 96,000 to 272,000 gallons of graywater per day or 1,000,000 gallons per week. Strategies to minimize the discharge of graywater can include reducing the production of graywater, holding the graywater onboard, or using a reception facility.

The final rule defines ''graywater'' to mean drainage from galley, shower, laundry, bath, water fountain, and sink drains, and other similar sources. 40 CFR 139.2. The revised definition is intended to provide better clarity regarding the sources of graywater; however, it does not change the types of wastewaters that were covered by the VGP and now regulated under this final rule. The definition now explicitly references the galley drains as a graywater source, and favors the term ''sinks'' over ''washbasins'' as a more appropriately expansive term. The definition for ''graywater'' in the proposed rule included a sentence describing drainage from sources that do not constitute graywater, but the list was removed as it was not exhaustive. EPA notes, however, that drainage from toilets, urinals, hospitals or other medical spaces or equipment, animal spaces, and cargo spaces are not considered graywater for purposes of this rule.

The final rule maintains many of the requirements included in the proposed rule, including the requirements for vessel operators to minimize the discharge of graywater and to discharge while underway when practical and as far from shore as practical. The final rule also requires that soaps, cleaners, and detergents used by vessel owner/operators that enter the graywater system be minimally-toxic, phosphate-free, and biodegradable. The final rule clarifies the requirement to include products provided to persons onboard (*e.g.,* passengers) by vessel owner/operators. EPA acknowledges the difficulty in applying such a requirement to products brought onboard by passengers/guests and therefore does not include such a requirement. The final rule also clarifies the requirement to include ''other substances'' to ensure that similar products entering the graywater systems are similarly minimally-toxic, phosphate-free, and biodegradable. The final rule includes the requirement to minimize the introduction of kitchen oils and food and oil residue to the graywater system. While filtered dishwater and drainage from galley sinks and floor drains are regulated as graywater under this rule, food waste and its derivatives are not. EPA acknowledges that food waste may unavoidably enter the graywater system during normal dishwashing, so this requirement is intended to ensure that the amount entering the system is minimized.

The final rule identifies a numeric discharge standard that must be met for discharges of graywater from any new vessel of 400 GT and above that is certificated to carry 15 or more persons and provides overnight accommodations to those persons; any passenger vessel (excluding any ferry) with overnight accommodations for 500 or more persons; any passenger vessel (excluding any ferry) with overnight accommodations for 100–499 persons unless the vessel was constructed before December 19, 2008, and does not voyage beyond 1 NM from shore; and any new ferry authorized by the USCG to carry 250 or more persons. Such vessels could be equipped either with a treatment system to meet the standards in 40 CFR 139.21(f) or sufficient storage capacity to retain all graywater onboard while operating in waters subject to the VIDA. Under the proposed rule, the discharge of graywater from any new vessel of 400 GT and above was required to meet the numeric discharge standard. This proposal was based on VGP reporting data that indicated between one-third and one-half of manned vessels of 400 GT or above that are not cruise ships or ferries are equipped with a treatment system for graywater, graywater mixed

with sewage, or a combined treatment system that may treat graywater. Based on EPA's knowledge of sewage handling practices, a wastewater that is frequently commingled with graywater, and comments received regarding the need for adequate pumpout facilities, EPA further assumed that vessels built with storage capacity would be serviced by stationary and mobile (*e.g.,* trucks and barges) pumpout facilities that currently receive sewage and graywater from vessels, with increasing demand for these services driving increased availability. In light of public comments received on the proposed rule, however, EPA presented an additional regulatory option in the 2023 supplemental notice to limit the applicability of the provision to those new vessels of 400 GT and above that are certificated to carry 15 or more persons and provide overnight accommodations to those persons. This additional regulatory option was adopted in this rule on the basis of the information presented by EPA in the supplemental notice and the feedback received during the comment period. The final rule also now defines ''new ferry'' to clarify the applicability of 40 CFR 139.21(e)(4). Additionally, the final rule clarifies that ''passenger vessel'' in 40 CFR 139.21(e)(2) and (3) does not include ferries for purposes of those provisions. This is consistent with the VGP that previously used the terminology ''cruise ship'' for those requirements. Furthermore, the graywater systems standard already includes specific requirements for ferries.

The final numeric discharge standard generally mirrors that from the proposed rule, but deviates from the VGP in that it does not include the percent removal requirements for BOD and TSS. EPA acknowledges that, in the absence of the percent removal requirements for BOD and TSS, this provision may be less stringent than the VGP; however, consistent with CWA section 312(p)(4)(D)(ii)(II), the Administrator may revise a standard of performance to be less stringent than an applicable existing requirement if the Administrator determines that a material technical mistake occurred or if information becomes available that was not reasonably available when the Administrator promulgated the initial standard of performance. EPA made a material technical mistake in the VGP by including the percent removal requirement, because it is based on secondary treatment regulations for land-based municipal sewage, wherein the characteristics of the influent are well-understood but the facility has little control over the inputs. Onboard vessels, there is significant variability in graywater characteristics but greater ability to control the contribution of BOD and TSS, for example, by separating galley graywater from other sources of graywater entering the treatment system. EPA also became aware of new information through implementation of the VGP that the requirement for the 30-day average percent removal for BOD and TSS to not be less than 85 percent is also difficult to monitor and enforce on a vessel, unlike at a land-based facility where influents and effluents are more easily monitored, which was information not available to the Administrator when the percent removal requirement was promulgated. Additionally, the retained requirements are substantively the same as those under the VGP in terms of pollutant reductions achieved. The numeric limits are consistent with the VGP, while the percent removal requirements did not make sense in the context of onboard application. VGP reporting data for graywater systems demonstrates that the majority of vessels did not, or were not able to, characterize influent for BOD and TSS. Without influent information, it is not possible to calculate percent reduction. Therefore, the technical mistake discussed above, coupled with this new information, contributed to EPA's determination that it was appropriate to eliminate the percent removal requirements.

As requested by commenters, the final numeric discharge standard includes additional clarifying language. First, the standard for fecal coliform at 40 CFR 139.21(f)(1)(i) and (ii) reflects units of both MPN/mL and cfu/mL on the basis that newer microbiological test methods have MPN outputs and, while the test methods differ, the number of bacteria in the tested sample are comparable to the numeric discharge standard. The standard for fecal coliform at 40 CFR 139.21(f)(1)(ii) now also clarifies that percentage of samples required to comply with the specified fecal coliform limit is tied to the same 30-day period as the geometric mean standard in 40 CFR 139.21(f)(1)(i). Finally, the standard at 40 CFR 139.21(f)(5) and (f)(5)(i) uses ''total residual oxidizers,'' instead of ''total residual chlorine'' for consistency with the wording in other similar standards (*e.g.,* ballast tanks). The provision now reads, ''For any discharge from a graywater system using chlorine, total residual oxidizers must not exceed 10.0 µg/L.''

The numeric discharge standards are based on the performance of ''advanced wastewater treatment systems (AWTSs),'' which are sophisticated marine sanitation devices. In evaluating options for graywater treatment, EPA reaffirmed that treatment of commingled graywater and sewage by an AWTS produces significant constituent reductions in the resulting effluent. AWTSs differ from traditional treatment systems in that they generally employ enhanced methods for treatment, solids separation, and disinfection, such as through the use of membrane technologies and UV disinfection. The numeric discharge standard for graywater systems uses the pathogen indicator fecal coliform, though AWTSs also greatly reduce the concentrations of other pathogen indicators, such as *E. coli* and enterococci, during treatment and disinfection (U.S. EPA, 2008). AWTSs are currently in wide use and economically achievable for certain vessel classes. For example, the Cruise Lines International Association (2019) reports that 68 percent of member lines' global fleet capacity is currently served by AWTSs. Also, all new ships on order by member lines will be equipped with AWTSs. In Alaska, under the existing ''Large Cruise Ship General Permit,'' certain large commercial passenger vessels may only discharge wastewater (including sewage and graywater) that has been treated by an AWTS or equivalent system. As an alternative to using a treatment system to meet the numeric discharge standard, these vessels may instead be equipped with sufficient storage capacity to retain graywater onboard while operating in waters subject to the VIDA.

For graywater, the numeric discharge standards rely on a mix of averaging periods and instantaneous maximums, both of which are commonly used in setting numeric effluent discharge limits depending on the nature of the pollutant and the characteristics of the discharger. Where EPA adopted a long-term average as opposed to an instantaneous or daily maximum, it did so based on two reasons. First, EPA considered the regulatory setting. Monitoring discharges onboard a vessel can present unique challenges compared to monitoring discharges from land-based facilities, which is the typical regulatory context for numeric effluent discharge limits. Systems that are designed to meet an instantaneous maximum require a higher level of control, and therefore less variability, in the system. Where it was practical to adopt a standard based on an instantaneous or daily maximum, EPA attempted to do so. For example, the final standard for discharges from ballast tanks includes the use of instantaneous maximums. As indicated in the ballast tanks section,

the challenges associated with collecting and testing representative samples of ballast water at the time of discharge required a different approach. Second, EPA considered how the pollutant operates in the environment. The use of an instantaneous maximum is preferred over the use of a long-term average where the upper bounds of variability in the discharge may cause serious environmental harm. As compared to, for example, the discharge of ANS from untreated ballast water which can potentially spread and reproduce, the pollution associated with untreated graywater discharges contributes to a more gradual decline in environmental quality. As such, the use of long-term averages in 40 CFR 139.21(f) allows for the variability that is expected in a well-operated treatment system.

At the same time, the monthly averages require the vessel operator to remain vigilant to ensure that, despite this variability, discharges consistently meet the numeric limit. Vessels to which the standard applies are expected to operate treatment systems that can consistently achieve compliance with the monthly average based on the vessel's expected loadings (or otherwise be equipped with storage to prevent discharges). Pursuant to the general operation and maintenance standards described in subpart B, vessels are expected to discharge while underway when practical and as far from shore as practical. This encourages commingling of the graywater constituents and further decreases the risks associated with variability in the system. EPA recognizes that the option to install AWTSs or sufficient holding capacity may be unavailable for certain vessels for such reasons as cost, stability of the vessel, or space constraints. As such, EPA does not propose that all vessels be required to treat graywater discharges to the numeric discharge standard found in 40 CFR 139.21(f).

The final rule prohibits the discharge of graywater in certain locations unless the discharge meets the numeric discharge standard in 40 CFR 139.21(f). The prohibition applies to discharges within 3 NM from shore for any vessel that voyages at least 3 NM from shore and has remaining available graywater storage capacity. Similarly, the prohibition applies to the discharge of graywater within 1 NM from shore from any vessel that voyages at least 1 NM but not more than 3 NM from shore and has remaining available graywater storage capacity. In other words, for vessels that voyage at least 3 NM from shore and have available storage capacity, the discharge of untreated graywater must occur while further than 3 NM from shore. For vessels that voyage at least 1 NM but not beyond 3 NM from shore and have available storage capacity, the discharge of untreated graywater must occur while further than 1 NM from shore. These limitations apply unless the graywater is treated in accordance with 40 CFR 139.21(f), and the language in 40 CFR 139.21(f) was updated to make clear that the vessels identified in 40 CFR 139.21(d) must also meet the numeric discharge standard if discharging graywater, not just those identified in 40 CFR 139.21(e). If a vessel is configured to be able to divert graywater to tanks typically used for other purposes, and it is safe and permissible to do so, then such tanks are considered by EPA to be available capacity for purposes of the foregoing requirements. These requirements are intended to limit nearshore discharges of pollutants without a significant increase in compliance costs because the requirements apply only to those vessels with available storage capacity.

The final rule does not include graywater discharge standards for commercial vessels in the Great Lakes, consistent with CWA section 312(a)(6) that specifies the term ''sewage,'' with respect to commercial vessels on the Great Lakes, shall include graywater. As such, graywater discharges from commercial vessels on the Great Lakes are subject to the requirements in CWA sections 312(a)-(l) and the implementing regulations at 40 CFR part 140 and 33 CFR part 159. Additionally, per CWA section 312(p)(9)(A)(v), the general preemption of State authority to adopt or enforce any law, regulation, or other requirement with respect to the covered incidental discharges does not apply to the discharge of graywater from a passenger vessel in Alaska (including all waters in the Alexander Archipelago) carrying 50 or more passengers.

Non-commercial vessels operating on the Great Lakes may only discharge graywater if the discharge is treated such that it does not exceed 200 fecal coliform forming units per 100 milliliters and contains no more than 150 milligrams per liter of suspended solids. This is because the Agency determined that graywater treatment using an existing system meeting the 40 CFR part 140 standards represents the appropriate level of control for those non-commercial vessels operating in the Great Lakes that do not hold their graywater for onshore disposal. Hence, either treatment devices or adequate holding capacity are available and used for managing graywater from vessels operating on the Great Lakes. The final rule clarifies that this provision only applies if the vessel is not subject to the requirements under 40 CFR 139.21(e), where EPA has determined a differing level of control is appropriate, to avoid ambiguity when a vessel is potentially subject to both 40 CFR 139.21(e) and (g).

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule establishes additional controls for discharges from graywater systems into federally-protected waters. 40 CFR 139.40(h).

13. Hulls and Associated Niche Areas

a. Anti-Fouling Coatings

Vessel hulls are often coated with anti-fouling compounds to prevent or inhibit the attachment and growth of biofouling organisms. Selection, application, and maintenance of an appropriate anti-fouling coating type and thickness according to vessel profile is critical to effective biofouling management, and therefore preventing the introduction and spread of ANS from the vessel hull and associated niche areas. Multiple types of anti-fouling coatings are available for use, including hard, controlled depletion or ablative, self-polishing copolymer, and fouling release coatings. The use of non-biocidal and non-ablative anti-fouling coatings, when practicable, is recommended. Anti-fouling coatings may employ physical, biological, chemical, or a combination of controls to reduce biofouling. Those that contain biocides prevent the attachment of biofouling organisms to the vessel surface by continuously leaching substances that are toxic to aquatic life. The most commonly used anti-fouling biocide is copper. Manufacturers may also combine copper with other biocides, often called booster biocides, to increase the effectiveness of the anti-fouling coating. Cleaning the anti-fouling coating typically results in pulses of biocide into the environment, particularly if surfaces are cleaned within the first 90 days following application.

The final rule requires that the selection of an anti-fouling coating for the hull and associated niche areas must be specific to the vessel's operational profile, and that any biocidal anti-fouling coatings used must have appropriate biocide release rates and components that are biodegradable once separated from the vessel surface. 40 CFR 139.22(c)(1). Operational profile factors can influence biofouling rates and include the vessel speed during a typical voyage, aquatic environments

traversed, type of surface painted, typical water flow for any hull and niche areas, planned periods between drydock, and expected periods of inactivity or idleness. Generally, an optimal biocide will have broad spectrum activity, low mammalian toxicity, low water solubility, no bioaccumulation up the food chain, no persistence in the environment, and compatibility with raw materials (IMO, 2002). Non-biocidal anti-fouling coatings are available and vessels that typically operate at high speeds may effectively manage biofouling, particularly macrofouling, with non-biocidal anti-fouling coatings. Additionally, vessels operating in waters with lower biofouling pressure and those that spend less time at dock are expected to have a lower biofouling rate and should select either non-biocidal anti-fouling coatings or anti-fouling coatings with low biocide discharge rates. However, these non- or low-biocidal anti-fouling coatings may not be suitable for all operational profiles (*e.g.,* for vessels that occasionally endure extended idling).

Adherence to manufacturer specifications is necessary to ensure the longevity and effectiveness of the anti-fouling coating and is considered best practice. If an anti-fouling coating is not properly selected, applied, or maintained, it will likely show signs of deterioration, such as indications of excessive cleaning actions (*e.g.,* brush marks) or blistering due to the internal failure of the paint system. Such deterioration may allow for biofouling organisms to grow on exposed surfaces, increasing the potential for the introduction and spread of ANS. Improper application and maintenance of an anti-fouling coating may also increase the discharge of particles into the aquatic environment and degradation of the integrity of wetted surfaces. The VGP required that any anti-fouling coatings be applied, maintained, and removed consistent with the FIFRA label, if applicable. The final rule similarly requires that anti-fouling coatings be applied, maintained, and reapplied consistent with manufacturer specifications, including but not limited to the thickness, the method of application, and the lifespan of the coating. 40 CFR 139.22(c)(2). One option for meeting this requirement is to schedule the in-service period of the anti-fouling coating to match the vessel's drydock cycles. Larger vessels, particularly those used in the carriage of goods, are subject to requirements for safety inspections and maintenance activities that dictate how frequently they must be drydocked. Factoring this schedule into coating selection ensures the anti-fouling coating will sufficiently protect the vessel for the period needed without creating additional leachate or wastes.

b. Tributyltin (TBT) Requirements

The International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS Convention) was adopted in 2001 and came into force in 2008. The United States became a contracting party to the AFS Convention on November 21, 2012. Domestically, the Clean Hull Act of 2009 implements the requirements of the AFS Convention. Consistent with the AFS Convention, the Clean Hull Act, and the VGP, the final rule requires that anti-fouling coatings not contain TBT or any other organotin compound used as a biocide. Additionally, 40 CFR 139.22(c)(3)(i) requires that any vessel hull previously covered with an anti-fouling coating containing TBT (whether used as a biocide or not) or any other organotin compound (if used as a biocide) must either (1) maintain an effective overcoat that forms a barrier on the vessel hull so that no TBT or other organotin leaches from the vessel hull; or (2) remove any TBT or other organotin compound from the vessel hull. EPA is unaware of any non-biocidal use of TBT that would result in a residual presence in anti-fouling paints. Combined, the requirements in the final rule are substantively equivalent to a zero-discharge standard of TBT from vessel hulls. EPA expects that few, if any, vessels have exposed TBT coatings on their hulls and that the final standard for all organotin compounds, including TBT, is technologically available based on other anti-fouling coating options.

Other less toxic organotin compounds such as dibutyltin oxide are used in small quantities as catalysts in some non-biocidal anti-fouling coatings. One class of non-biocidal anti-fouling coatings, sometimes referred to as fouling release coatings, produce a non-stick surface to which fouling organisms cannot firmly adhere. To function properly, the coating surface must remain smooth, intact, and not leach into the surrounding water. Because these less toxic organotins are used as a catalyst in the production of non-biocidal anti-fouling coatings, such production may result in trace amounts of organotin in anti-fouling coatings. Consistent with the AFS Convention, the Clean Hull Act, and the VGP, the final rule authorizes the use of non-biocidal anti-fouling coatings that contain trace amounts of catalytic organotin (other than TBT) if the trace amounts of organotin are not used as a biocide. The final rule requires that, when used as a catalyst, an organotin compound must contain less than 2,500 milligrams total tin per kilogram of dry paint and must not be designed to slough or otherwise peel from the vessel hull. 40 CFR 139.22(c)(4). Incidental amounts of an anti-fouling coating discharged by abrasion during cleaning or after contact with other hard surfaces (*e.g.,* moorings) are acceptable.

c. Cybutryne Requirements

Cybutryne, commonly known as Irgarol 1051, is a biocide that functions by inhibiting the electron transport mechanism in algae, thus inhibiting growth. There are numerous commercially available antifoulants that are similar in cost and are less harmful to the aquatic environment (IMO, 2018). Restrictions on cybutryne are already in place in a number of countries globally, and cybutryne is therefore less widely used compared to other antifoulants (IMO, 2017). Anti-fouling coatings that do not contain cybutryne are both technologically available and economically achievable. Consistent with a recent 2020 MEPC amendment to the AFS Convention, the final rule prohibits the application of cybutryne-containing anti-fouling coatings on hulls and niche areas. 40 CFR 139.22(c)(5). In cases where anti-fouling coatings contain cybutryne in the external anti-fouling coating layer of the hull or external parts of surfaces, the final rule requires either (1) the removal of any cybutryne coating; or (2) the application and maintenance of an effective overcoat that forms a barrier so that no cybutryne leaches from the underlying anti-fouling coating. The latter is provided as an option to comply with this requirement because overcoats are commercially available. Incidental amounts of anti-fouling coating discharged by abrasion during cleaning or after contact with other hard surfaces (*e.g.,* moorings) are acceptable.

d. Copper Requirements

Copper, primarily in the form of cuprous oxide, is the most common biocidal anti-fouling coating, accounting for approximately 90 percent of the volume of sales of specialty anti-fouling coatings in the United States (U.S. EPA, 2018). Copper is a broad-spectrum biocide that effectively prevents both microfouling and macrofouling. Copper is considered less harmful to the aquatic environment than TBT-containing compounds, but its use has nevertheless contributed to loadings in copper-impaired waters. The final rule requires

that, as appropriate based on vessel class and operations, alternatives to copper-based anti-fouling coatings (*e.g.,* non-biocidal anti-fouling coatings) or coatings with lower biocidal release rates be considered for vessels spending 30 or more days per year in copper-impaired waters or using these waters as their home port. 40 CFR 139.22(c)(6). EPA determined that there are no direct substitutions for copper as a biocide that are as affordable or as effective without posing similar risks to non-target aquatic species (U.S. EPA, 2018). As such, the final rule does not require the selection of an alternative anti-fouling coating for vessels.

The significance of discharges from a biocidal anti-fouling coating depends not only on the substance used, but also on the leaching rate of the biocide (IMO, 2009). The leaching rate is the rate of discharge or entry into the environment from the coating itself. While the leaching rate of copper from anti-fouling coatings is relatively low (average discharge rates range from 3.8–22 μg/cm²/day), copper-containing anti-fouling coatings can still account for significant accumulations of metals in receiving waters of ports where numerous vessels are present (Valkirs et al., 2003; Zirino and Seligman, 2002). While maximum leaching rates for copper-based anti-fouling coatings on recreational vessels have been established both federally and locally, EPA does not currently have the data available to establish a leaching rate that would be appropriate for the wide variety of largely commercial vessels subject to this rule. Therefore, the final rule does not require a specific, maximum copper leaching rate for anti-fouling coatings, acknowledging that use of anti-fouling coatings is also regulated in the United States through the FIFRA.

e. Cleaning

Most commercial seagoing vessels are required to undertake periodic hull and niche area surveys as part of International Association of Classification Societies rules and in accordance with IMO conventions to ensure that hulls and niche areas are maintained in a satisfactory condition. The VGP, in part 4.1, required all vessels subject to that permit to inspect the hull annually, or during drydock for those areas that are not otherwise safe to inspect. Cleaning of hulls and niche areas, including the removal of any biofouling, is an important component of hull and niche area maintenance. Niche areas account for approximately 10 percent of the total wetted surface area of a vessel (Moser et al., 2017). However, over 80 percent of species sampled in vessel biofouling studies were found in niche areas (Bell et al., 2011). Therefore, while representing a smaller surface area compared to the hull, niche areas may disproportionately contribute to the discharge of biofouling organisms.

Vessels generally use two types of cleaning techniques to remove biofouling: cleaning while in drydock and in-water cleaning. Techniques for in-water cleaning of vessel surfaces can be broadly separated into two categories: (1) in-water cleaning with capture (IWCC); and (2) in-water cleaning without capture. IWCC is the use and operation of a cleaning system for vessel surfaces that is designed to capture and transport coatings and biofouling organisms to an adjacent barge or shore-based facility for collection and processing. The waste stream is processed by a separate service provider, not the vessel. As such, EPA views these discharges as similar to the discharge of treated ballast water from a barge-based or shore-based treatment facility, which are not subject to regulation under the VIDA pursuant to CWA section 312(p)(9)(C). In-water cleaning without capture refers to any in-water cleaning techniques that do not use a capture device.

Vessels following effective biofouling management strategies generally should be able to maintain fouling at or below the microfouling level. The final rule requires that hulls and niche areas be managed to minimize biofouling, such as through preventative cleaning of microfouling. 40 CFR 139.22(d)(2). Preventative in-water cleaning, also referred to as proactive cleaning, is the frequent, gentle cleaning of the vessel hull and appendages to prevent or reduce the attachment and growth of macrofouling, with minimal impacts to the anti-fouling system. Preventative cleaning of microfouling can have many benefits, including but not limited to drag reduction, operations enhancement, and reduced discharge of biofouling organisms. Studies have estimated that even light microfouling can increase the drag on a vessel by up to 25 percent (Townsin, 2003; Schultz, 2007). Predictive analytics have shown that preventative cleaning reduces fuel consumption and that increasing cleaning to an interval of approximately six months can save hundreds of thousands of dollars in annual fuel costs per vessel (Marr, 2017). Additionally, preventative cleaning has been shown to effectively reduce biofouling without significantly increasing biocide loading into the aquatic environment (Tribou and Swain, 2017). However, one study of preventative in-water cleaning showed elevated levels of copper directly above cleaning brushes during cleaning (Scianni et al., 2023).

Monitoring the condition of hulls and niche areas and removal of any biofouling identified is considered an industry best practice in large part due to the economic incentive involved, as the costs associated with regular in-water cleaning (namely, the cleaning services, disruptions to a vessel's schedule, and staff time), are outweighed by the fuel savings that result from managing vessel biofouling at or below the microfouling level. As such, EPA finds that preventative cleaning of microfouling represents BAT to control the release of biofouling organisms and biocides from hulls and niche areas, with likely long-term savings to the vessel industry.

The final rule prohibits any discharge from in-water cleaning without capture of macrofouling. 40 CFR 139.22(d)(4). Removal of macrofouling requires more abrasive techniques that may damage the anti-fouling coating, resulting in increased likelihood of subsequent biofouling, as well as a larger pulse of biocides and particles into the aquatic environment. Furthermore, macrofouling is composed of more diverse and reproductively mature organisms and, depending on geographic origin, may present a greater risk of discharging biofouling organisms than microfouling (Davidson et al., 2013; Morrisey et al., 2013; Department of the Environment [DOE] and New Zealand Ministry for Primary Industries [MPI], 2015). By effective preventative cleaning of microfouling, cleaning in drydock when practicable, and other best practices required in the final rule, vessels may minimize the need to conduct in-water cleaning of macrofouling. In circumstances where such cleaning is necessary, IWCC is available to vessels.

The final rule requires that hull and niche area cleanings must minimize the damage to the anti-fouling coating, minimize the release of biocides, and follow applicable cleaning requirements found on the anti-fouling coating manufacturers' instructions and any applicable FIFRA label. 40 CFR 139.22(d)(3). This is consistent with requirements in the Uniform National Discharge Standards for Vessels of the Armed Forces for underwater ship husbandry at 40 CFR 1700.37. These requirements are considered best practices and ensure the longevity and effectiveness of the anti-fouling coating, while minimizing pollutant loading into the surrounding waters. Similar to the final standards for deck washdowns in

this rule at 40 CFR 139.15(g), the final standards for hulls and associated niche areas at 40 CFR 139.22(d)(7) require any soap, cleaner, or detergent used on vessel surfaces, including but not limited to the scum lines of the hull, to be minimally-toxic, phosphate-free, and biodegradable.

40 CFR 139.22(d)(5) prohibits any discharge from in-water cleaning without capture of any copper-based hull coatings in a copper-impaired waterbody within the first 365 days after application of that coating. The final rule also prohibits in-water cleaning without capture on any section of an anti-fouling coating that shows excessive cleaning actions (*e.g.,* brush marks) or blistering due to internal failure of the paint system. 40 CFR 139.22(d)(6). Such a level of deterioration indicates failure at the anti-corrosive/anti-fouling interface, which is more likely to be broken by cleaning. The rupturing of paint blisters results in discharges of anti-fouling coating particles and an increased rate of damage to the anti-fouling system more generally. In turn, the exposed surface is subject to increased fouling and risk of corrosion. EPA expects that an anti-fouling system selected in accordance with the vessel's operational profile and cleaned with minimally abrasive cleaning methods should not present signs of significant deterioration at the anti-corrosive/anti-fouling interface. Therefore, adherence to this standard is achievable by following the coating and cleaning practices in the final standards. In consideration of implementation and enforcement challenges, the final rule excludes the terms ''local in origin'' and ''plume or cloud of pain'' from the proposed rule in regard to hull and niche area cleaning, but retains the terms ''frequent,'' ''gentle,'' ''minimal,'' and ''minimize release of biocides.''

The final rule stipulates that cleanings should take place in drydock when practicable. at 40 CFR 139.22(d)(1). Drydock schedules should be factored into the inspection and management of areas susceptible to biofouling. EPA recognizes that it may not be technologically available or economically achievable for a vessel to be drydocked outside of the regular schedule to clean biofouling from the hull or niche areas. For example, some vessels are too large to be regularly removed from the water, and any repair or maintenance required on the hull or niche areas must occur while the vessel is pierside between drydockings. Several mechanisms are used by vessel owners/operators to determine the necessary cleaning interval, including regular inspections, ISO standard 19030 measurements of hull and propeller performance, and/or advanced data analytics. Further, many technologies are available for preventative in-water cleaning, including diver-operated technologies or remotely operated vehicles. A review of the market of hull cleaning robots sponsored by the USCG in 2016 identified no fewer than 15 technologies capable of conducting in-water cleaning of vessel hulls. More recently, remotely operated vehicles for preventative cleaning have also been developed as equipment attached to the vessel itself, enabling flexibility in cleaning schedules along a vessel's route.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule prohibits the discharge from in-water cleaning of vessel hulls and niche areas into federally-protected waters except by any vessel owned or under contract with the United States, State, or local government to do business exclusively in any federally-protected waters. 40 CFR 139.40(i).

14. Inert Gas Systems

Inert gas is used on tankers for several reasons, with one of the primary uses being to control the oxygen levels in the atmosphere of cargo and ballast tanks to prevent explosion and suppress flammability. Inert gas system discharges consist of scrubber washwater and water from deck water seals when used as an integral part of the inert gas system.

EPA was unable to identify new technology or best management practice options for discharges from inert gas systems, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.23. EPA did not receive any comments suggesting revisions to the proposed standards. EPA did, however, modify the structure of the requirements from the proposed rule to clarify that while there are no additional discharge-specific requirements applicable to inert gas systems, as with any discharge incidental to the normal operation of vessel subject to regulation under this part, discharges from inert gas systems must meet the general discharge requirements in subpart B of this part.

15. Motor Gasoline and Compensating Systems

Motor gasoline compensating system discharge is the discharge of seawater that is taken into motor gasoline tanks to replace the weight of fuel as it is used and eliminates free space where vapors could accumulate. The compensating system is used for fuel tanks to supply pressure for the gasoline and to keep the tank full to prevent potentially explosive gasoline vapors from forming. The seawater is discharged when the vessel refills the tanks with gasoline or when performing maintenance. The discharge can contain both toxic and conventional pollutants including residual oils or traces of gasoline constituents, which can include alkanes, alkenes, aromatics (*e.g.,* benzene, toluene, ethylbenzene, phenol, and naphthalene), metals, and additives. Most vessels by design do not produce this discharge.

EPA was unable to identify new technology or best management practice options for discharges from motor gasoline compensating system, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP with slight modifications for consistency and clarity. 40 CFR 139.24. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule does not include additional discharge-specific requirements applicable to motor gasoline compensating systems except in federally-protected waters (40 CFR 139.24(b)), but as with any discharge incidental to the normal operation of vessel subject to regulation under this part, discharges from motor gasoline compensating systems must meet the general discharge requirements in subpart B of this part (including requirements set forth for oily discharges as appropriate for the vessel).

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule requires several additional controls for discharges from motor gasoline compensating systems from a vessel operating in federally-protected waters. 40 CFR 139.40(j).

16. Non-Oily Machinery

Non-oily machinery wastewater is the combined wastewater from the operation of distilling plants, water chillers, valve packings, water piping, low- and high-pressure air compressors, propulsion engine jacket coolers, fire pumps, and seawater and potable water pumps. Non-oily machinery wastewater systems are intended to keep wastewater from machinery that does

not contain oil separate from wastewater that has oil content. Non-oily machinery wastewater discharge rates vary by vessel size and operation type, ranging from 100 to 4,000 gallons per hour. Constituents of non-oily machinery wastewater discharge can include a suite of conventional and nonconventional pollutants including metals and organics.

EPA was unable to identify new technology or best management practice options for discharges of non-oily machinery wastewater, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP with minor modifications for clarity. 40 CFR 139.25. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule prohibits the discharge of untreated non-oily machinery wastewater and packing gland or stuffing box effluent that contains toxic or bioaccumulative additives, or the discharge of oil in such quantities as may be harmful. 40 CFR 139.25(b).

17. Pools and Spas

Cruise ships and other vessels occasionally have freshwater or seawater pools or spas onboard that use water treated with chlorine or bromine as a disinfectant. When pools or spas are drained, the water is discharged overboard or sent to an AWTS. The discharge water can contain nonconventional pollutants such as bromine and chlorine.

EPA was unable to identify new technology or best management practice options for discharges from pools and spas, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.26. EPA determined the dechlorination limits by using those established for BWMSs and by evaluating comments submitted by the public on the 2008 and 2013 VGPs that indicated such limits are achievable. Furthermore, the final numeric discharge standard is consistent with common dechlorination limits from shore-based sewage treatment facilities.

As such, the final pool and spa discharge standards are the same as the proposed standards. The final rule requires vessel operators, except for unintentional or inadvertent releases from overflows across the decks and into overboard drains, to discharge while underway unless determined to be infeasible, and dechlorinate and/or debrominate any pool or spa water, prior to discharging overboard. 40 CFR 139.26(b). To be considered dechlorinated, the total residual chlorine in the pool or spa effluent must be less than 100 µg/L. To be considered debrominated, the total residual oxidant in the pool or spa effluent must be less than 25 µg/L.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule requires additional controls for discharges from pools and spas from vessels operating in federally-protected waters. 40 CFR 139.40(k).

18. Refrigeration and Air Conditioning

Condensation from cold refrigeration or evaporator coils of air conditioning systems drips from the coils and collects in drip troughs that typically channel to a drainage system. The condensate discharge may contain toxic, conventional, and nonconventional pollutants including but not limited to detergents, seawater, food residue, and trace metals. This waste stream can easily be segregated from oily wastes and toxic or hazardous materials and safely discharged. Condensation is generally directed overboard, or in some instances may be collected for temporary holding until onshore disposal or otherwise drained to the bilge.

EPA was unable to identify new technology or best management practice options for refrigeration and air conditioning condensate, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.27.

The final rule prohibits the discharge of refrigeration and air conditioning condensate that contacts toxic or hazardous materials. 40 CFR 139.27(b). Any discharges from refrigeration and air conditioning that are commingled with other discharges (*e.g.,* through the bilge or non-oily machinery) must meet the requirements for both discharges.

19. Seawater Piping

Seawater piping systems carry seawater to various locations onboard the vessel via a network of pipes and pumps. This seawater is critical to the proper functioning of a vessel and is used for activities such ballasting and firefighting, as well as in a variety of systems (*e.g.,* engines, hydraulics, cleaning equipment, refrigeration, toilet systems). Based on comments received on the proposed rule, the final rule includes a definition for ''seawater piping system.'' (*See* 40 CFR 139.2 definition of ''seawater piping system''). Some components of seawater piping systems, including sea chests, sea inlet pipes, and overboard discharges, are also considered niche areas (*See* 40 CFR 139.2, definition of ''niche areas''). Niche areas that are part of the seawater piping system are subject to requirements at 40 CFR 139.22.

Seawater piping systems can harbor and discharge a large quantity of biofouling organisms and represent a challenge for biofouling management as they are generally more difficult to access. They are also protected from hydrodynamic forces, facilitating the accumulation and survivorship of biofouling organisms. Ensuring that seawater piping systems are unobstructed by biofouling is vital to vessel operations, including the structural integrity of the vessel and the safety of the crew.

The final rule also requires that any vessel with a seawater piping system that accumulates macrofouling must be fitted with a Marine Growth Prevention System (MGPS). 40 CFR 139.28(c). The most common MGPSs for seawater include sacrificial anodic copper systems and chlorine-based dosing systems. These systems are already widely used and available. EPA recognizes that there may be a variety of systems capable of addressing biofouling in seawater piping systems, and an effective, preventative biofouling management strategy may include a combination of different systems (*e.g.,* chemical injection; electrolysis, ultrasound, ultraviolet radiation, or electrochlorination; application of an anti-fouling coating; and use of cupro-nickel piping). Additionally, based on comments received on the proposed rule, the final rule includes glass-reinforced filament-wound epoxy-based composite piping as an acceptable component of a MGPS. 40 CFR 139.28(c)(2)(v). EPA considers the operation and maintenance of an MGPS to represent BAT for the control of biofouling organisms associated with seawater piping systems due to the many options available and the wide extent of their current use.

An MGPS can vary widely in operational characteristics and placement suitability. The final rule requires that MGPS selection must consider the level, frequency, and type of expected biofouling and the design, location, and area in which the system will be used. 40 CFR 139.28(c)(1). For example, it has been suggested that an MGPS installed in the sea chest provides protection to both the sea chest

and internal pipework, while one installed in the strainer may only protect the internal pipework. Furthermore, anti-fouling coating selection and application should be appropriate to the material of the piping and level of waterflow to which the coated area is subjected. Based on the potential differences in profile of the coated areas, the anti-fouling coating applied to a seawater piping system may be different from the anti-fouling coating applied to the vessel hull. EPA recommends that the MGPS be selected, installed, and maintained according to the manufacturer specifications.

Upon identification of macrofouling in the seawater piping system despite preventative measures, reactive measures such as use of physical cleaning devices must be used to remove biofouling; however, discharges from reactive measures used to remove macrofouling are prohibited in port. 40 CFR 139.28(c)(3). A vessel may use a separate service provider to clean and capture wastes from the cleaning process provided any discharges from those activities are managed pursuant to other applicable legal authorities (*e.g.,* CWA section 402), consistent with 40 CFR 139.22. The frequency of inspection and identification of macrofouling in a seawater piping system (and use of reactive measures when macrofouling is present) will be vessel-specific, so the final rule does not identify a specific time interval for such measures. Time intervals should be determined based on a vessel's operational profile.

Seawater piping system discharges include non-contact engine cooling water, hydraulic system cooling water, refrigeration cooling water, and freshwater lay-up wastewater. Such systems use ambient seawater to absorb the heat from heat exchangers, propulsion systems, and mechanical auxiliary systems. The water is typically circulated through an enclosed system that does not come in direct contact with machinery, but still may contain sediment from water intake, traces of hydraulic or lubricating oils, and trace metals leached or eroded from the pipes within the system. Additionally, because it is used for cooling, the effluent will have an increased temperature. Cooling water can reach high temperatures with the thermal difference between seawater intake and discharge typically ranging from 5 °C to 25 °C, with maximum temperatures reaching 140 °C. The use of shore power may reduce the discharges of seawater from cooling systems. Because shore power may not be available in all locations, may not be sufficient for the electricity needs of the vessel, and/or may not be compatible with the vessel's systems, the final rule does not require the use of shore power to reduce thermal discharges from seawater piping systems although EPA does recommend the use of shore power when available and feasible for vessel use.

Based on comments received on the proposed rule, the final rule includes a new 40 CFR 139.28(b) requiring that seawater piping systems must be inspected, maintained, and cleaned as necessary to minimize the accumulation and discharge of biofouling organisms. EPA added this requirement as a BMP that is reasonably necessary to carry out the purpose of reducing and eliminating the discharge of pollutants. Inspection and maintenance, with occasional cleaning as necessary, is technologically available and economically achievable. As discussed in section VII. of this preamble, *Definitions,* the final rule dispenses with the use of the Navy Fouling Rating scale employed in the proposed rule in favor of the term ''macrofouling'' to identify fouling that had been designated as FR–20 in the proposed rule.

Finally, as discussed in section VIII.C. of this preamble, *Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements,* the final rule requires controls for discharges seawater piping systems from vessels operating in federally-protected waters. 40 CFR 139.40(l).

20. Sonar Domes

Sonar dome discharge consists of leachate from anti-fouling materials into the surrounding seawater and the discharge of seawater or freshwater retained within the sonar dome. Sonar domes house detection, navigation, and ranging equipment and are filled with water to maintain their shape and pressure. They are typically found on research vessels but may be present on other vessel classes. Sonar dome discharge occasionally occurs when the water in the dome is drained for maintenance or repair, and discharge rates are estimated to range from 300 to 74,000 gallons from inside the sonar dome for each repair event. This discharge from inside the dome may include toxic pollutants including zinc, copper, nickel, and epoxy paints. Additionally, discharge occurs when materials leach from the exterior of the dome. Components that may leach into surrounding waters include anti-fouling agents, plastic, iron, and rubber.

EPA was unable to identify new technology or best management practice options for discharges from sonar domes, therefore the Agency relied on the BPT/BCT/BAT analysis underlying the VGP requirements and is requiring substantively the same requirements included in the VGP. 40 CFR 139.29. EPA did not receive any comments suggesting revisions to the proposed requirements.

The final rule prohibits the discharge of water from inside the sonar dome during maintenance or repair. 40 CFR 139.29(b). The final rule also prohibits the discharge of bioaccumulative biocides from the exterior of the sonar dome when non-bioaccumulative alternatives are available. 40 CFR 139.29(c).

C. Discharges Incidental to the Normal Operation of a Vessel—Federally-Protected Waters Requirements

CWA section 312(p)(4)(B)(iii) specifies that, with limited exceptions, EPA must establish Federal standards of performance that are no less stringent than the VGP requirements relating to effluent limits and related requirements, including with respect to waters subject to Federal protection, in whole or in part, for conservation purposes. Therefore, the final rule prohibits or limits discharges in federally-protected waters consistent with the VGP requirements established for ''waters federally-protected for conservation purposes.'' 40 CFR 139.40.

The final rule includes several updates to these VGP requirements. EPA determined that these new requirements are technologically available because the scope of waters to which the requirements would apply are limited, such that vessels are able to operate while restricting their discharges in these protected waters. For example, a vessel traveling through the Florida Keys National Marine Sanctuary can ordinarily wait to discharge accumulated water and sediment from any chain locker or chemically-dosed seawater piping until no longer in those federally-protected waters. EPA determined that the requirement is economically achievable because EPA does not have any information indicating that vessels undertaking an activity such as holding the discharge until it is no longer in federally-protected waters would incur costs.

1. Identification of Federally-Protected Waters

The designated federally-protected waters for this rulemaking include National Marine Sanctuaries, Marine National Monuments, National Parks, National Wildlife Refuges, National Wilderness Areas, or parts of the National Wild and Scenic Rivers

System, consistent with the categories of waters listed in appendix G of the VGP. These VGP categories were based on EPA's review of several Federal authorities that protect waters that are known to be of high value or sensitive to environmental impacts, such as those administered by the Bureau of Land Management (BLM), the National Park Service (NPS), the U.S. Fish and Wildlife Service (FWS), the Forest Service (USFS), and the National Oceanic and Atmospheric Administration (NOAA). Consistent with CWA section 312(p)(9)(E), the requirements of this part (40 CFR part 139) are in addition to any requirements established by the Secretary of Commerce or the Secretary of the Interior to administer any land or waters under their administrative control (*e.g.,* National Marine Sanctuaries Act requirements applicable to these areas established pursuant to 16 U.S.C. 1431 *et seq.;* 15 CFR part 922; 50 CFR part 404).

Federally-protected waters are likely to be of high quality and consist of unique ecosystems that may include distinctive species of aquatic animals and plants. Furthermore, as protected areas, these waters are more likely to have a greater abundance of sensitive species of plants and animals that may have difficulty surviving in areas with greater anthropogenic impact. Such waters are important to the public at large, as evidenced by the waters' special status or designation by the Federal Government as National Marine Sanctuaries, Marine National Monuments, National Parks, National Wildlife Refuges, National Wilderness Areas, or parts of the National Wild and Scenic Rivers System. The areas considered to be federally-protected waters are as follows:

- National Marine Sanctuaries—as designated under the National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.*) and implementing regulations found at 15 CFR part 922 and 50 CFR part 404. EPA retrieved this information from *https://sanctuaries.noaa.gov/visit/#locations* on 5/1/2024.
- Marine National Monuments—as designated by presidential proclamation under the Antiquities Act of 1906 (54 U.S.C. 320301 *et seq.*). EPA retrieved this information from *https://www.fisheries.noaa.gov/pacific-islands/habitat-conservation/marine-national-monuments-pacific* and *https://www.fisheries.noaa.gov/new-england-mid-atlantic/habitat-conservation/northeast-canyons-and-seamounts-marine-national* on 5/13/24.
- National Parks (including National Preserves and National Monuments)—as designated under the National Park Service Organic Act, as amended (54 U.S.C. 100101 *et seq.*) within the National Park System by the NPS within the U.S. Department of the Interior. EPA retrieved this information from *https://www.nps.gov/aboutus/national-park-system.htm* on 5/6/2024.
- National Wildlife Refuges (including Wetland Management Districts, Waterfowl Production Areas, National Game Preserves, Wildlife Management Area, and National Fish and Wildlife Refuges)—as designated under the National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd *et seq.*). EPA retrieved this information directly from USFWS, 5/10/2024; *See also https://www.fws.gov/our-facilities.*
- National Wilderness Areas—as designated under the Wilderness Act of 1964 (16 U.S.C. 1131 *et seq.*). Section 4(c) of the Wilderness Act strictly prohibits motorized vehicles, vessels, aircrafts or equipment for the purposes of transport of any kind within the boundaries of all wilderness areas (16 U.S.C. 1133(c)). Exceptions to this Act include motorized vehicle use for the purposes of gathering information on minerals or other resources; for the purposes of controlling fire, insects, or disease; and in wilderness areas where aircraft or motorized boat use have already been established prior to 1964. EPA retrieved this information from *https://wilderness.net/practitioners/wilderness-areas/search.php#resultsSection* on 4/22/2024. National Wild and Scenic Rivers—as designated under the Wild and Scenic Rivers Act of 1968 (16 U.S.C. 1271 *et seq.*). EPA retrieved this information from *https://www.rivers.gov/river-miles* on 4/22/2024.

EPA does not consider Outstanding National Resource Waters (ONRWs) as federally-protected waters for purposes of this rule, as these are *State* or *Tribal* water quality-based designations under the antidegradation policy of the CWA. By contrast, CWA section 312(p)(4)(B)(iii) requires EPA to promulgate regulations that are no less stringent than the VGP with respect to ''waters subject to *Federal* protection'' (emphasis added). In excluding ONRWs from the list of waters subject to Federal protection in the final rule even though such waters were considered federally-protected under the VGP, EPA finds that it made a material technical mistake or misinterpretation of law when it required protection of ONRWs as ''Waters Federally Protected Wholly or in Part for Conservation Purposes'' under the VGP.

EPA solicited comments on the use of the VGP's appendix G, and the proposed rule's equivalent appendix A, as the list of federally-protected waters. EPA updated the list of appendix A in the final rule based on information available from Federal agencies at the time of this public notice, as specified above. In response to commenter concerns regarding the usability of the list in appendix A, particularly for operators unfamiliar with U.S. federally-protected waters, EPA added an asterisk (''*'') modifier to denote those federally-protected waters that may be most relevant to vessels regulated under this rule. However, EPA reiterates that 40 CFR 139.40 remains applicable to all federally-protected waters listed in appendix A. Specific areas in appendix A were marked with an asterisk if they were within 0.1 mile of the coast or Great Lakes, or within 0.5 miles of National Waterway Network lines (DOT, 2024). Methodology for this analysis is available in the docket. While this approach may not perfectly correspond with areas where vessels do not/do transit, it can assist the regulated community, particularly international operators who may be less familiar with U.S. waterways, to identify federally-protected waters that they may be most likely to transit, while maintaining the level of stringency from the VGP.

The final appendix A was also modified to address both public and interagency comments to remove several National Marine Sanctuaries that are protected solely for cultural or historical purposes, rather than marine resource conservation purposes, and for which there is no evidence that discharges from vessels subject to this rule would threaten these resources (*i.e.,* Thunder Bay, Mallows Bay, Potomac River, Monitor, Wisconsin Shipwreck, and Lake Ontario NMS). Excluding waters that are protected solely for cultural or historical purposes and not for marine resource conservation purposes is consistent with the requirement that EPA's regulations continue VGP requirements to protect waters subject to Federal protection ''for conservation purposes.'' 33 U.S.C. 1322(p)(4)(B)(iii)(I). Such exclusion is also consistent with the National Marine Sanctuaries Act, as some federally-protected waters regulations are narrowly tailored to protect shipwrecks and other resources. For these areas, NOAA specifically chose not to regulate vessel discharges because it found no evidence that discharges would threaten the cultural or historical resources.

EPA also received comments related to the applicability of the VIDA to federally-protected waters outside of 12 NM. The VIDA (and by extension this rule) is only applicable within waters of the United States or waters of the contiguous zone (12 NM under Article 24 of the Convention of the Territorial Sea and the Contiguous Zone). Therefore, EPA removed the following three sanctuaries from appendix A that are located fully outside of these waters: Flower Garden Banks, Grey's Reef, and Monitor National Marine Sanctuaries. For federally-protected waters that contain portions that are subject to the VIDA but also extend outside of waters subject to the VIDA (*e.g.,* Stellwagen Bank National Marine Sanctuary; Florida Keys National Marine Sanctuary; Papahānaumokuākea Marine National Monument), the standards promulgated here only apply to the portion of federally-protected waters within 12 NM.

2. Discharge-Specific Requirements in Federally-Protected Waters

The final rule includes specific requirements for discharges into federally-protected waters, as listed in appendix A and consistent with CWA section 312(p)(4)(B)(iii). These requirements are in addition to any applicable general or specific discharge requirements in subparts B and C. EPA specifically solicited comments on the additional discharge requirements proposed for vessels operating in federally-protected waters. Commenters generally expressed support for the federally-protected waters requirements except for certain discharges from vessels that operate exclusively in federally-protected waters. To address these concerns, the final rule identifies exclusions for vessels operating exclusively within federally-protected waters for discharges from ballast tanks, decks, fire protection equipment, and hulls and associated niche areas in 40 CFR 139.40(b), (f), (g) and (i), respectively. The additional requirements for vessels operating in federally-protected waters are described in the following paragraphs and are generally consistent with the relevant section(s) of the VGP and based on a similar BAT finding that these requirements are technologically available and economically achievable and do not have any unacceptable non-water quality environmental impacts, including energy requirements.

Ballast Tanks (40 CFR 139.40(b)): The discharge or uptake of ballast water must be avoided in federally-protected waters, with certain exceptions. This requirement does not apply to a vessel operating within the boundaries of any National Marine Sanctuary that preserves shipwrecks or maritime heritage in the Great Lakes unless the designation documents for the sanctuary do not allow taking up or discharging ballast water in such sanctuary, pursuant to section 610 of the Howard Coble Coast Guard and Maritime Transportation Act of 2014 as amended by the Coast Guard Reauthorization Act of 2015. Based on comments received which provided new information on feasibility of the proposed rule, the final rule exempts any vessel that operates solely in a federally-protected water within a single COTP Zone from the discharge prohibition in federally-protected waters. Because they don't leave federally-protected waters, such vessels have no feasible way of discharging outside these areas, and ballast water discharge is a necessary part of normal vessel operations. This exemption is consistent with a comparable single COTP Zone ballast water exclusion applicable in other, non-federally-protected waters. Additionally, as described in the proposed rule (85 FR 67818, October 26, 2020, section VIII.B.1.i), this requirement does not apply beyond the boundaries of a federally-protected water. While the VGP required avoidance of uptake or discharge into waters that ''may directly affect'' federally-protected waters, EPA did not include this expanded affected area as applied in the VGP because information needed to make a determination regarding a potential direct affect is highly dependent on the specific instant at which a ballast water uptake or discharge event is to occur, is not readily available, and is not easily characterized. This determination was based on new information on feasibility from commenters. As practical guidance for vessel operators that can delay a ballast water discharge (*e.g.,* an exchange) until the vessel is further away from federally-protected waters, EPA recommends that the discharge or uptake of ballast water be conducted as far from federally-protected waters as possible.

Bilges (40 CFR 139.40(c)): The discharge of bilgewater into federally-protected waters is prohibited from any vessel of 400 GT and above.

Boilers (40 CFR 139.40(d)): Any discharge from a boiler into federally-protected waters is prohibited. This requirement acknowledges, however, that small volumes of routine blowdown may be discharged, including from boilers that are designed and operated to blowdown automatically, if preventing such discharge would compromise the safety of life at sea pursuant to 40 CFR 139.1(b)(3).

Chain Lockers (40 CFR 139.40(e)): The discharge of accumulated biological organisms, water, and sediment from any chain locker into federally-protected waters is prohibited. Cleanout of chain lockers can be scheduled when a vessel is outside of protected waters. This prohibition does not mean that vessels should avoid rinsing their *anchor chain* in federally-protected waters after they have been anchored there, as generally required by 139.14(b) (''Anchors and anchor chains must be rinsed of biofouling organisms and sediment when the anchor is retrieved'').

Decks (40 CFR 139.40(f)): The discharge of deck washdown into federally-protected waters is prohibited; however, the final rule exempts any vessel operating exclusively within federally-protected waters. As commenters noted, deck washdown is part of necessary maintenance for these vessels. Additionally, while the VGP extended this requirement to only large ferries (see VGP Part 5.3), the final rule applies it to all vessels (except those exempted) because deck washdowns for all vessels (except those exempted) can be scheduled when a vessel is outside of protected waters.

Fire Protection Equipment (40 CFR 139.40(g)): Several commenters expressed concerns regarding compliance with USCG fire drill requirements and anchor chain washdown requirements in 40 CFR 139.14 of the proposed rule, which both result in the discharge of water from fire protection equipment. The VGP allowed anchor chain wash down from the firemain in federally-protected waters to comply with wash down requirements, but did not include any specifics for meeting USCG fire drill requirements. EPA has determined that the ability to discharge water to comply with USCG fire drill requirements is necessary to maintain safety and prevent loss of life at sea. Based on the requirements of the VGP and new information provided through comments on the proposed rule, the discharge from fire protection equipment into federally-protected waters is prohibited except to comply with USCG fire drill requirements or anchor and anchor chain requirements in 40 CFR 139.14. When USCG fire drills are required, only vessels owned or under contract with the United States, a State, or a local government to do business exclusively in any federally-protected waters may discharge firefighting foam into federally-protected waters. 40 CFR 139.19 already prohibits the use of

fluorinated firefighting foam in waters subject to this rule, with few exceptions.

Graywater Systems (40 CFR 139.40(h)): The discharge of graywater into federally-protected waters is prohibited from any vessel with remaining available graywater storage capacity.

Hulls and Associated Niche Areas (40 CFR 139.40(i)): The discharge from in-water cleaning of vessel hulls and niche areas into federally-protected waters is prohibited; however, the final rule exempts any vessel operating exclusively within federally-protected waters to address commenters' concerns regarding necessary maintenance. Other than for vessels that operate exclusively within federally-protected waters, in-water cleaning of vessel hulls and niche areas can be scheduled when the vessel is outside of protected waters.

Motor Gasoline and Compensating Discharge (40 CFR 139.40(j)): The discharge of motor gasoline and compensating discharges into federally-protected waters is prohibited.

Pools and Spas (40 CFR 139.40(k)): The discharge of pool or spa water into federally-protected waters is prohibited. This prohibition includes all discharges of pool or spa water regardless of chemical concentrations, including seawater pools. While the VGP requirement was only for medium and large cruise ships, the final rule extends it to all vessels with pools or spas because for all vessels with pools and spas these discharges can be scheduled when the vessel is outside of protected waters.

Seawater Piping Systems (40 CFR 139.40(l)): The discharge of chemical dosing, as required in 40 CFR 139.28, into federally-protected waters is prohibited. Chemical dosing and the resultant discharge can be scheduled when the vessel is outside of protected waters.

D. Discharges Incidental to the Normal Operation of a Vessel—Previous VGP Discharges No Longer Requiring Control

The final rule excludes fish hold effluent and small boat engine wet exhaust as independent discharges incidental to the normal operation of a vessel. A fish hold is the area where fish are kept once caught and kept fresh during the remainder of the vessel's voyage before being offloaded to shore or another tender vessel. The fish hold is typically a refrigerated seawater holding tank, where the fish are kept cool by mechanical refrigeration or ice. With the exception of ballast water, CWA section 312(p)(2)(B)(i)(III) excludes from these final regulations discharges incidental to the normal operation of a fishing vessel; therefore, although this discharge was included in the VGP, it is not a discharge incidental to the normal operation of a vessel subject to these regulations.

Small boat engines use ambient water that is injected into the exhaust for cooling and noise reduction purposes. Similar to fishing vessels, with the exception of ballast water, CWA section 312(p)(2)(B)(i)(III) excludes from these final regulations discharges incidental to the normal operation of a vessel less than 79 feet; therefore, although this discharge was included in the VGP, it is not a discharge incidental to the normal operation of a vessel subject to these regulations.

IX. Procedures for States To Request Changes to Standards, Regulations, or Policy Promulgated by the Administrator

A. Petition by a Governor for the Administrator To Establish an Emergency Order or Review a Standard, Regulation, or Policy

Under CWA section 312(p)(7)(A), a Governor of a State may submit a petition to the Administrator to either (1) issue an emergency order; or (2) review any standard of performance, regulation, or policy promulgated under that section if there exists new information that could reasonably result in a change. The final rule requires that such a petition be signed by the Governor (or a designee) and include the purpose of the petition (request for emergency order or review of any standard of performance, regulation, or policy); any applicable scientific or technical information that forms the basis of the petition; and the direct and indirect benefits if the requested petition were to be granted by the Administrator.

In issuing an emergency order under CWA section 312(p)(4)(E), the statute directs EPA to consider the risk of introduction or establishment of an ANS or the adverse effects of a discharge that contributes to a violation of a water quality requirement. As such, EPA is not requiring that a petition for an emergency order include submission of direct and indirect cost information due to the statute's directive to consider risk reduction and the protection of environmental quality. Before issuing an emergency order, CWA section 312(p)(4)(E)(ii) requires the Administrator to request written concurrence from the Secretary. Should the Secretary fail to concur within 60 days of the request, the Administrator may issue the order but must include in the administrative record documentation of the request and a response to any written objections received from the Secretary.

To review any standard, regulation, or policy, on the other hand, EPA is requiring that a petition include the costs to the affected classes, types, and/or sizes of vessels if the petition were granted. 40 CFR 139.50(b)(4). This is because, in setting a standard under the VIDA, EPA must comply with all other applicable provisions of CWA section 312(p), which includes setting standards based on BPT, BCT, and BAT. This includes a consideration of economic achievability.

After considering the information provided in the petition and other factors, as appropriate and based on EPA's discretion, the Administrator shall grant or deny the petition. If granted, the Administrator will either issue the relevant emergency order for a petition to issue an emergency order (40 CFR 139.50(d)(1)), or submit a Notice of Proposed Rulemaking to the **Federal Register** for comment for a petition to review any standard of performance, regulation, or policy (40 CFR 139.50(d)(2)).

EPA solicited comments on the proposed process for Governors to petition for the issuance of an emergency order or to review any standard of performance, regulation, or policy, including whether a more detailed process should be developed. Based on comments received on the proposed rule, the final rule utilizes the 180-day and one-year statutory timeframes associated with responding to a petition for issuance of an emergency order or to review any standard, regulation, or policy, respectively. 40 CFR 139.50(c). The final rule also includes an additional information requirement for petitions to review any standard of performance, regulation, or policy. Namely, a petition must identify the anticipated costs if the requested petition were to be granted by EPA. 40 CFR 139.50(b)(4). As explained earlier in this section, this is in keeping with the fact that the VIDA directs EPA to apply the CWA technology-based standards for BPT, BCT, and BAT when developing Federal standards of performance. These CWA standards require the Agency to account for the projected cost of achieving pollution reductions. Finally, EPA fixed a minor typographical error that was present in the proposed rule; the final rule correctly references CWA section 312(p)(4)(E), not 312(p)(4)(e), in 40 CFR 139.50(a)(1).

B. Petition by a Governor for the Administrator To Establish Enhanced Great Lakes System Requirements

CWA section 312(p)(10)(B) identifies a process for establishing enhanced Federal standards or requirements to apply within the Great Lakes System in lieu of any comparable standards or requirements promulgated under CWA section 312(p)(4)–(5). CWA section 312(p)(10)(B)(i)–(ii) provides that any Governor of a Great Lakes State (or the Governor's designee) may initiate the process by submitting a petition for an enhanced standard of performance or other requirement to the Governor of each of the other Great Lakes states, the Executive Director of the Great Lakes Commission, and the Director of EPA's Great Lakes National Program Office proposing that other Governors of the Great Lakes states endorse the petition. The final rule incorporates the requirements at CWA section 312(p)(10)(B)(iii)(I)(bb) that a petition shall include an explanation regarding why the applicable standard of performance or other requirement is (1) at least as stringent as a comparable standard of performance or other requirement in the final rule; and (2) in accordance with maritime safety and applicable maritime and navigation laws and regulations. 40 CFR 139.51(b). After following the applicable statutory procedures, CWA section 312(p)(10)(B)(iii)(I)(aa) provides that the Great Lakes Governors may jointly submit to the Administrator and the Secretary an endorsement of a proposed standard of performance or other requirement to apply within the Great Lakes System. CWA section (p)(10)(B)(ii)(III)(bb) requires that any proposed standard or other requirement must be endorsed by all Great Lakes Governors if the proposal would impose any additional equipment requirement on a vessel, or at least five Great Lakes Governors if the proposal would not impose any additional equipment requirement on a vessel.

Upon receipt of the proposed standard of performance or requirement from a Great Lakes Governor, CWA section 312(p)(10)(B)(iii)(II) provides that the Administrator and the Secretary must sign for publication in the **Federal Register** a joint notice that provides an opportunity for public comment on the proposed standard of performance or requirement. Pursuant to CWA section 312(p)(10)(B)(iii)(III)(aa), as soon as practicable after publication of the joint notice, the Administrator shall commence a review of the proposed standard of performance or requirement to determine if it is at least as stringent as the comparable CWA section 312(p) standards and requirements, while the Secretary concurrently reviews to determine whether the proposed standard of performance or requirement is in accordance with maritime safety and applicable maritime and navigation laws and regulations. During review, pursuant to CWA section 312(p)(10)(B)(iii)(III)(bb), the Administrator and the Secretary shall consult with the Governor of each Great Lakes State and representatives from the Federal and provincial governments of Canada; shall take into consideration any relevant data or public comments received; and shall not take into consideration any preliminary assessment by the Great Lakes Commission or dissenting opinion submitted by a Governor of a Great Lake State except to the extent that such an assessment or opinion is relevant to the criteria for the applicable determination under CWA section 312(p)(10)(B)(iii)(III)(aa). CWA section 312(p)(10)(B)(iii)(IV) provides that not later than 180 days after receipt of the proposed standard of performance or requirement, the Administrator and the Secretary shall (1) approve or disapprove the proposal; and (2) submit to the Governor of each Great Lakes State, and issue in the **Federal Register**, a notice of the determination. Under CWA section 312(p)(10)(B)(iii)(V), if the proposal is disapproved, the Administrator and Secretary shall sign and submit a notice of determination to the **Federal Register** for publication that describes the reasons why the standard of performance or requirement is less stringent or inconsistent with applicable maritime safety or maritime navigational laws and regulations, and provide any recommendations for modifications that the Great Lakes states could make to conform the disapproved portion of the proposal to the applicable requirements. Under CWA section 312(p)(10)(B)(iii)(VI), if the Administrator and Secretary approve a proposed standard of performance or other requirement, the Administrator shall establish, by regulation, the proposed standard or requirement within the Great Lakes in lieu of any comparable standard or other requirements promulgated under CWA section 312(p)(4), and the Secretary shall establish, by regulation, any requirements necessary to implement, ensure compliance with, and enforce any new standard or requirement promulgated pursuant to this petition process, or to apply the proposed requirement, within the Great Lakes System in lieu of any comparable requirement promulgated under paragraph CWA section (312)(p)(5).

EPA solicited comments on the process to request enhanced Great Lakes system requirements, including the extent to which EPA should provide further details in the final rule considering language already included in the VIDA. Based on comments received on the proposed rule and to improve clarity, EPA both replaced and added language in the regulations to mirror the VIDA statutory language more closely. This includes adding an additional provision that speaks to the timing and effect of a Governor's withdrawal of an endorsement for a proposed standard (40 CFR 139.51(f)), as well as a clarification that a complete prohibition of one or more discharges only applies to those waters of states with Governors endorsing the prohibition (40 CFR 139.51(k)). EPA received one comment that led to a reexamination of the provision dealing with judicial review and determined that, because the statute speaks for itself on this matter, it does not require repetition in the regulations and was therefore removed. EPA also made minor modifications to the standards to improve consistency between related paragraphs, add statutorily identified timeframes for the petition process, and fix minor typographical errors in CWA references.

C. Application by a State for the Administrator To Establish a State No-Discharge Zone

Under CWA section 312(p)(10)(D), states have the opportunity to apply to EPA to prohibit one or more discharges incidental to the normal operation of a vessel, whether treated or not, into specified waters, if the State determines that the protection and enhancement of the quality of some or all its waters require greater environmental protection.

Pursuant to CWA section 312(p)(10)(D)(ii), a discharge prohibition established by EPA through regulation would not apply until the date the Administrator makes a determination as described in paragraph (iii) establishing that (1) the prohibition would protect and enhance the quality of the specified waters; (2) adequate facilities for the safe and sanitary removal of the discharge incidental to the normal operation of a vessel are reasonably available for the waters to which the prohibition would apply; and (3) the discharge can safely be collected and stored until a vessel reaches a discharge facility or other location. If the no-discharge zone (NDZ) concerns ballast water discharges regulated under CWA

section 312(p), then the Administrator must also determine that adequate facilities are reasonably available for vessels subject to the proposed NDZ after considering, at a minimum, water depth, dock size, pumpout capacity and flow rate, availability of year-round operations, proximity to navigational routes, and the ratio of pumpout facilities to vessels in operation in the specified waters, and that the prohibition for ballast water discharges will not unreasonably interfere with the safe loading and unloading of cargo, passengers, or fuel.

CWA section 312(p)(9)(A)(v) provides Alaska the authority to regulate the discharge of graywater within State waters from a passenger vessel carrying 50 or more passengers. Pursuant to section 1410 of Title XIV, Certain Alaskan Cruise Ship Operations, Alaska may petition EPA under CWA section 312(f) to prohibit the discharge of graywater and sewage from cruise ships operating in some or all of the waters of the Alexander Archipelago or the navigable waters of the United States within the State of Alaska or within the Kachemak Bay National Estuarine Research Reserve. For all other incidental discharges and types of vessels subject to this rule, Alaska, as with the rest of the states, must adhere to the application process identified in the VIDA and these regulations.

The final rule is substantively similar to the proposed rule; however, the final rule incorporates some modifications to improve and clarify the application requirements and process and to address comments received during the public comment period. The application requirements are intended to ensure that the State applicant provides sufficient information for EPA to make the necessary determination identified in CWA section 312(p)(10)(D)(iii)(I) without undue delay. EPA's experience with CWA section 312(f) sewage NDZs suggests that an informed determination requires a detailed understanding of the proposed waters and affected vessel population to ensure that the discharge prohibition is both environmentally beneficial and achievable. For example, EPA cannot make a determination as to the adequacy and reasonable availability of facilities if the application does not characterize the location and operational capabilities of each facility. EPA does, however, recognize that certain information requirements may not be static or otherwise readily available to the State. Information provided by the State to fulfill these information requirements in the application may be projections or estimates; however, projections and estimates must be justified and explained in the application.

The final rule identifies the information requirements for a state's application and the key procedural steps associated with EPA approval and USCG concurrence. Based on comments received, EPA made adjustments to some of the requirements. Among other facility characteristics identified in the proposed rule, the final rule requires the state's application to include information on the connections at each facility for offloading discharge(s) from vessels to account for the design of vessels and the potential issue that incompatible connections may pose for vessel access to facilities. 40 CFR 139.52(c)(5). To address transport concerns raised during the comment period, the final rule incorporates a new application requirement for the State to explain the wastewater handling procedures of each facility. 40 CFR 139.52(c)(6). The purpose of this requirement is to ensure that storage and transport of offloaded wastewater is conducted safely and in conformance with applicable laws. This information will also assist EPA in making a timely determination regarding the adequacy of facilities for pumpout and treatment of the wastewater, as required by the VIDA. The final rule also updates the provision concerning the map of facility locations to allow a State to provide the coverage area for mobile facilities in lieu of a specific point location. 40 CFR 139.52(c)(7). EPA notes that some facility characteristics identified as required in the final rule may not always be relevant to mobile facilities. However, any pertinent restrictions that may affect vessel access to the facility must be noted. At commenters' request, EPA also added clarifying information in this preamble regarding applicability of the NDZ program to graywater in Alaska and the use of projections in the State application. To the extent that commenters otherwise asked EPA to require additional information in State NDZ applications, such requirements are unnecessary for EPA to evaluate the applications for an NDZ under the VIDA.

In light of comments received, EPA concluded that the requirement for the application to include a table identifying the location and geographic area of each proposed NDZ was unclear. Therefore, the final rule instead includes a provision requiring a narrative explanation of the location of the proposed waters and a map delineating the boundaries of the requested prohibition using geographic coordinates. 40 CFR 139.52(c)(1). EPA has further concluded that the 40 CFR 139.52(h) provision from the proposed rule was not necessary to include in the final rule because it repeated the contents of 40 CFR 139.52(b). In 40 CFR 139.52(d)(2), EPA added that ''the availability of operational changes as a means to reduce the discharge'' is another factor considered in making an adequacy determination, because operational changes may be available as an alternative to pumpout facilities for certain discharges. Lastly, EPA made minor changes to the standards to consistently refer to the state's submittal as an ''application,'' to emphasize that only existing facilities can be considered as part of EPA's adequacy determination, and to simplify the provisions related to the application process for clarity.

Regarding the application process, EPA notes that within 90 days of receipt of an application from a State containing the required information, EPA will send a determination letter to the applicant with a tentative approval or disapproval. Following a tentative approval, EPA will proceed through the rulemaking process, including issuance of a Notice of Proposed Rulemaking and a request for concurrence from the USCG. If appropriate after review of public comments, EPA will publish a final rule establishing a prohibition. An NDZ will be enforced according to CWA section 312(k) and will have an effective date 30 days after publication of the final rule unless the State and EPA agree to a later date. If EPA concludes that it is appropriate to disapprove the application, either initially or after review of public comments on the Notice of Proposed Rulemaking, EPA will notify the public of the disapproval by publishing a notice in the **Federal Register** that includes an explanation of EPA's decision-making.

X. Implementation, Compliance, and Enforcement

CWA section 312(p)(5) directs the USCG to develop implementing regulations governing the design, construction, testing, approval, installation, and use of marine pollution control devices as are necessary to ensure compliance with the Federal standards of performance presented in this final rule. Additionally, the USCG shall promulgate requirements to ensure, monitor, and enforce compliance of the final standards. As such, this final rule does not include implementation, compliance, or enforcement provisions.

XI. Economic Analysis

An Economic Analysis (EA) was developed to accompany this final rule.

In the EA, EPA projects that the incremental costs arising from the final rule will be minor and that the vessel community will experience a net savings of $11.3 million annually, based on $16.1 million of annualized incremental costs and $27.4 million of annualized incremental cost savings, at a two percent discount rate. The cost savings are principally the result of the VIDA's exclusion of small vessels and fishing vessels from Federal incidental discharge requirements (*e.g.,* CWA permits and national discharges standards), except for ballast water. When compared to the VGP requirements, this exclusion will reduce burden on more than 160,000 vessels. The EA includes a qualitative discussion of benefits.

EPA estimates that 69,000 U.S.-flagged and 16,000 foreign-flagged vessels will be subject to the discharge standards in this final rule. The EA evaluates the cost impacts to the 69,000 U.S.-flagged vessels, as well as the approximately 600 foreign-flagged vessels that are U.S.-owned.

To estimate cost impacts, the EA uses compliance with the VGP and the sVGP, as well as other regulations and industry standards, as the analytic baseline because it represents the *status quo* that existed prior to the passage of the VIDA. The analysis projected cost impacts expected as a result of the final EPA standards compared to the baseline experienced by the regulated community immediately prior to passage of the VIDA legislation. The VIDA repealed the sVGP effective immediately upon signature, while stipulating that VGP requirements are to remain in place until the new VIDA program is fully in force and effective. This analysis accounts for both the impacts of the final EPA standards as well as the regulatory relief expected as a result of the VIDA's exclusion of small vessels and fishing vessels from the discharge requirements, except for ballast water, and the corresponding repeal of the sVGP.

The cost analysis groups the final rule's major impacts into three major categories: (1) costs due to rule provisions dictated by the VIDA; (2) costs for rule provisions unchanged from the VGP; and (3) other rule provisions (including changes from the VGP). The first category—costs due to rule provisions dictated by the VIDA—include those legislative changes mandated directly in the VIDA that give rise to incremental costs to vessel owners/operators. These provisions impose new ballast water requirements nationally, as well as regionally in the Pacific Region and the Great Lakes. The estimated incremental cost for vessels to meet these ballast water-related Congressionally-mandated provisions is $5.5 million annually. There is also an incremental cost associated with the State petition processes provided for in the VIDA, estimated at $6 thousand annually based on expected burden from information collection activities over the next three years. The second category—costs for rule provisions unchanged from the VGP—specifically addresses the final standard for oil-to-sea interfaces, which clarifies that the scope of this discharge category includes discharge of lubricants from equipment that extends overboard, and vessels must therefore use EALs in equipment that extends overboard as well as equipment with oil-to-sea interfaces below the waterline. The economic analysis accompanying the 2013 VGP did not include a cost estimate for EAL use on equipment that extends overboard, so this EA rectifies that omission. EPA estimated an average annual incremental cost of $5.7 million for this category. The final category discusses other rule provisions including changes from the VGP. First, it discusses the final standards that result in incremental costs compared to existing VGP requirements. This includes the standards promulgated for graywater systems and seawater piping systems for which incremental costs are projected to increase by $2.7 million annually. This category also discusses the costs of the new requirement for new Lakers to install, operate, and maintain a BWMS that has been type-approved by the USCG. The EA calculated the total annualized cost to be $2.2 million for the new Laker equipment standard. Finally, this category discusses final standards that are not expected to result in incremental costs compared to the VGP baseline because they are largely consistent with the VGP and/or reflect practices already in place on vessels as a result of other regulations and industry standards. These include certain aspects of the standards for desalination and purification systems, exhaust gas recirculation systems, fire protection equipment, and hulls and associated niche area management.

The EA also characterizes the reduction in costs projected to result from the VIDA's exclusion of small vessels and fishing vessels from the discharge requirements, except for ballast water, and the corresponding repeal of the sVGP. EPA estimates that this regulatory relief will result in annual cost savings of about $27.4 million to the vessel community. EPA did not evaluate the cost impacts from changes in monitoring, reporting, inspection, or recordkeeping associated with the USCG's authorities and responsibilities under the VIDA.

To evaluate the potential impact of the final rule on small entities, EPA used a cost-to revenue test to evaluate potential severity of economic impact on vessels owned by small entities. The test calculates annualized pre-tax compliance cost as a percentage of total revenues and uses a threshold of 1 and 3 percent to identify entities that would be significantly impacted by this final rule. EPA projects the potential impacts would not exceed these conventional cost/revenue thresholds. In addition, the Agency completed estimates of the paperwork burden associated with the final rule. These estimates project the annualized paperwork burden on states that voluntarily petition EPA for any one of the following: establishment of no-discharge zones, review of Federal standards of performance, issuance of emergency orders, and establishment of enhanced Great Lakes System requirements.

EPA also assessed the environmental impacts from this final rule. The Agency does not expect the final rule to change environmental benefits significantly compared to those realized by the VGP. This is because the 2013 VGP already includes requirements for incidental discharges from the vessels subject to this rule, so the environmental benefits derived from having discharge standards in place are a significant part of the baseline. Additionally, the existing VGP requirements are largely adopted as the new discharge standards in this rule, in part due to the VIDA's requirement that EPA's standards be at least as stringent as those requirements in the 2013 VGP, barring certain specified exemptions. EPA notes that the VIDA exclusion of small vessels and fishing vessels, except for ballast water, and the corresponding repeal of the sVGP could potentially lead to a reduction in environmental benefits to the extent that affected vessels no longer adhere to practices previously required under the sVGP. In particular, the EA examines possible losses in benefits from the elimination of the sVGP discharge management requirements for bilgewater, graywater, and anti-fouling hull coatings.

The EA updates and replaces the Regulatory Impact Analysis (RIA) that was prepared alongside the proposed rule. Based on comments received on the proposed rule, the EA includes a revised U.S. ferry vessel estimate based on new sources identified by a commenter and information available

from EPA's 2013 VGP electronic reporting system. The final EA is available in the docket.

XII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 14094: Modernizing Regulatory Review

This action is a ''significant regulatory action'' as defined in Executive Order 12866, as amended by Executive Order 14094. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for Executive Order 12866 review. Documentation of any changes made in response to Executive Order 12866 review is available in the docket. EPA prepared an analysis of the potential costs and benefits associated with this action. This Economic Analysis is available in the docket.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that EPA prepared has been assigned EPA ICR number 2605.02. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

This action, once implemented through corresponding USCG requirements addressing implementation, compliance, and enforcement, would impose an information collection burden to states under the PRA. The action imposes a new information collection burden on states seeking to petition EPA to establish different Federal standards of performance including enhanced standards in the Great Lakes, issue emergency orders, or establish no-discharge zones. EPA does not anticipate an information collection burden on states until the USCG has established final implementing requirements (required by the VIDA as soon as practicable but not later than two years after the EPA discharge standards proposed in this rulemaking are finalized). After such time, the information collection burden relates to the voluntary preparation and submission of petitions by states and is therefore an intermittent activity.

The ICR submitted for approval to the OMB as part of this rulemaking reflects an anticipated burden to states in the third year of the three-year ICR cycle. This includes one petition of each type: Modification of Federal standards of performance, issuance of emergency orders, and establishment no-discharge zones. EPA does not expect petitions for enhanced Great Lakes System requirements during this ICR cycle. The type and level of detail of information that a State would need to generate to petition EPA under CWA section 312(p) is most analogous to the information prepared for an application to EPA under the existing CWA section 312 ICR (OMB control number 2040–0187), which includes State activities related to petitioning EPA for no-discharge zones for sewage and discharges incidental to the normal operation of vessels of the Armed Forces. For incidental discharges from vessels of the Armed Forces, states may also petition EPA for a review of standards. Because of the parallels in discharge types and State activities, EPA used the burden estimates in the existing ICR to inform the expected burden for this proposed rule. Looking ahead, EPA expects that this new ICR will be combined with the existing CWA section 312 ICR (OMB control number 2040–0187) expected to be renewed no later than September 30, 2026. This would create a single ICR that would include the information collection burden for all three vessel programs under CWA section 312 (sewage, vessels of the Armed Forces, and commercial vessels).

The hour and cost estimates, summarized below, include such activities as reviewing the relevant regulations and guidance documents, gathering and analyzing the required information, and preparing and submitting the application.

Respondents/affected entities: State governments (NAICS code 924110) are the only respondents to the data collection activities described in this ICR.

Respondent's obligation to respond: Preparation and submission of a petition is a voluntary action that may be undertaken by the respondent. This is not a reporting requirement, nor are there any deadlines associated with these petitions.

Estimated number of respondents: Three respondents are anticipated during this three-year ICR cycle.

Frequency of response: Three petitions are anticipated during this three-year ICR cycle, each in the third year, including one petition each for establishment of a no-discharge zone; review of any standard of performance, regulation, or policy; and issuance of an emergency order.

Total estimated burden: Approximately 83 hours per year.

Total estimated cost: $5,604 per year, including $150 annualized operation & maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce that approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. Although this action will impose requirements on any small entity that operates a vessel subject to the standards, EPA used a cost-to-revenue test to evaluate the potential severity of economic impact on vessels owned by small entities. EPA determined that the projected cost burden would not exceed 1 percent of annual revenue. Details of the screening analysis are presented in section 8.3 (''Regulatory Flexibility Act'') in the Economic Analysis available in the docket.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any State, local, or Tribal governments or the private sector.

E. Executive Order 13132: Federalism

EPA has concluded that this action has federalism implications because it preempts State law. The VIDA added a new CWA section 312(p)(9)(A) that specifies that, beginning on the effective date of the requirements promulgated by the Secretary established under CWA section 312(p)(5), no State, political subdivision of a State, or interstate agency may adopt or enforce any law, regulation, or other requirement with respect to an incidental discharge subject to regulation under the VIDA except insofar as such law, regulation, or other requirement is identical to or less stringent than the Federal regulations under the VIDA.

EPA provides the following federalism summary impact statement. EPA consulted with State and local officials early in the process of developing the proposed action to permit them to have meaningful and timely input into its development. EPA and the USCG conducted a Federalism consultation briefing on July 9, 2019, in Washington, DC to allow for such input. EPA provided an overview of the VIDA, described the interim requirements and the framework of future regulations, identified State provisions associated with the VIDA, and received comments and questions. The briefing was attended by representatives from the National Governors Association, the National Conference of State Legislatures, the U.S. Conference of Mayors, the County Executives of America, the National Association of Counties, the National League of Cities, Environmental Council of the States, the Association of Clean Water Administrators, the National Water Resources Association, the Association of Fish and Wildlife Agencies, the National Association of State Boating Law Administrators, the Western Governors Association, and the Western States Water Council. Pre-proposal comments were accepted from July 9, 2019 to September 9, 2019 and are described in conjunction with the Governors' Consultation comments. After the public comment period concluded, EPA met with state representatives to discuss topics of interest between June and October 2021 to inform the development of the supplemental notice and final rule.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action has Tribal implications. However, it will neither impose substantial direct compliance costs on federally recognized Tribal governments, nor preempt Tribal law. Tribes may be interested in this action because commercial vessels may operate in or near Tribal waters. Additionally, EPA may be authorized to treat eligible federally recognized Tribes as a State (TAS) under section 309 of the CWA.

EPA consulted with Tribal officials under the EPA Policy on Consultation and Coordination with Indian Tribes early in the process of developing this regulation to permit them to have meaningful and timely input into its development. A summary of that consultation and coordination follows.

EPA initiated a Tribal consultation and coordination process for EPA's 2020 Notice of Proposed Rulemaking (85 FR 67818, October 26, 2020) by sending a ''Notice of Consultation and Coordination'' letter on June 18, 2019, to all 573 Tribes that were federally recognized at the time.[8] The letter invited Tribal leaders and designated consultation representatives to participate in the Tribal consultation and coordination process that lasted from July 11 to September 11, 2019. EPA held an informational webinar for Tribal representatives on July 11, 2019, to obtain meaningful and timely input during the development of the proposed rule. During the webinar, EPA provided an overview of the VIDA, described the interim requirements and the framework of future regulations, and identified Tribal provisions associated with the VIDA. A total of nine Tribal representatives participated in the webinar. EPA also provided an informational presentation on the VIDA during the Region 10 Regional Tribal Operations Committee (RTOC) call on July 18, 2019, as requested by the RTOC. During the consultation period, Tribes and Tribal organizations sent two pre-proposal comment letters to EPA as part of the consultation process. In addition, EPA held one consultation meeting with the leadership of a Tribe, at the Tribe's request, to obtain pre-proposal input and answer questions regarding the forthcoming rule.

EPA incorporated the feedback it received from Tribal representatives in the proposed rule. Records of the Tribal informational webinar and a consultation summary of the written and verbal comments submitted by Tribes are included in the public docket for this rule. Several Tribes requested additional consultation in comments submitted during the public comment period of the proposed rule. EPA offered additional consultation opportunities and met with Tribal representatives of the Gun Lake Tribe and Chippewa Ottawa Resource Authority in September and October 2021, respectively, to inform development of the supplemental notice and final rule.

As required by section 7(a), the EPA's Tribal Consultation Official has certified that the requirements of the executive order have been met in a meaningful and timely manner. A copy of the certification is included in the docket.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that EPA has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive Order.

Therefore, this action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk. Since this action does not concern human health, EPA's Policy on Children's Health also does not apply. However, overall, this rule would reduce the amount of pollution entering waterbodies from vessels through the minimization and control of discharges entering the waters of the U.S. and the contiguous zone that may contain pollutants such as aquatic nuisance species (ANS), nutrients, bacteria or pathogens, oil and grease, metals, as well as other toxic, nonconventional, and conventional pollutants (*e.g.,* organic matter, bicarbonate, and suspended solids). This would yield human health benefits due to decreased exposure to these pollutants and improve the recreational utility of waterbodies where vessels would be subject to the proposed standards.

H. Executive Order 13211: Actions That Concern Regulations That Significantly Affect Energy Supply, Distribution, and Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. Any additional energy usage would be insignificant compared to the total energy usage of vessels and the total annual U.S. energy consumption. Additionally, given that the rule establishes national standards of performance for vessel incidental discharges, and that these standards are largely borne out of existing requirements under the 2013 Vessel General Permit, EPA does not anticipate any significant climate impacts.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards. For informational purposes, EPA notes the existence of voluntary standards applicable to vessel activities developed by NACE; these standards cover topics such as corrosion prevention and biofouling inspections.

[8] In December 2019, the Little Shell Tribe of Chippewa Indians became the 574th federally recognized Tribe.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations and Executive Order 14096: Revitalizing Our Nation's Commitment to Environmental Justice for All

EPA believes that it is not practicable to assess whether the human health or environmental conditions that exist prior to this action result in disproportionate and adverse effects on communities with environmental justice concerns. While EPA was unable to perform a detailed environmental justice analysis because it lacks data on the exact location of vessels and their associated discharges, the rulemaking would increase the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The Agency recognizes that the burdens of environmental pollution disproportionately fall on certain communities with environmental justice concerns. Overall, this rule would reduce the amount of pollution entering waterbodies from vessels through the minimization and control of discharges entering the waters of the U.S. and the contiguous zone that may contain pollutants such as aquatic nuisance species (ANS), nutrients, bacteria or pathogens, oil and grease, metals, as well as other toxic, nonconventional, and conventional pollutants (*e.g.,* organic matter, bicarbonate, and suspended solids). This would yield human health benefits due to decreased exposure to these pollutants and improve the recreational utility of waterbodies where vessels would be subject to the proposed standards.

The information supporting this Executive Order review is contained in section III.C. of this preamble, *Environmental Impacts of Discharges for Which Technology-Based Discharge Standards Are Established by This Rule,* which provides information on the pollutants found in the vessel discharges that this rule is intended to prevent or reduce from entering waters of the United States or the contiguous zone. Section V. of this preamble, *Stakeholder Engagement,* describes the public participation opportunities associated with this rule that allowed for meaningful and timely input on rule development and decision-making, including any relevant environmental justice concerns.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

XIII. References

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List of Subjects in 40 CFR Part 139

Environmental protection, Commercial vessels, Coastal zone, Incidental discharges.

Michael S. Regan,
Administrator.

■ Therefore, for the reasons set forth in the preamble, EPA amends 40 CFR chapter I, subchapter D by adding part 139 to read as follows:

PART 139—DISCHARGES INCIDENTAL TO THE NORMAL OPERATION OF VESSELS

Subpart A—Scope

Sec.

Subpart B—General Standards for Discharges Incidental to the Normal Operation of a Vessel

Authority: 33 U.S.C. 1251 *et seq.*

PART 139—DISCHARGES INCIDENTAL TO THE NORMAL OPERATION OF VESSELS

Subpart A—Scope

§ 139.1 Coverage.

(a) *Vessel discharges.* Except as provided in paragraph (b) of this section, this part applies to:

(1) Any discharge incidental to the normal operation of a vessel; and

(2) Any discharge incidental to the normal operation of a vessel (such as most graywater) that is commingled with sewage, subject to the conditions that:

(i) Nothing in this part prevents a State from regulating sewage discharges; and

(ii) Any such commingled discharge must comply with all applicable requirements of:

(A) This part; and

(B) Any law applicable to the discharge of sewage.

(b) *Exclusions.* This part does not apply to any discharge:

(1) Incidental to the normal operation of:

(i) A vessel of the Armed Forces subject to 33 U.S.C. 1322(n);

(ii) A recreational vessel subject to 33 U.S.C. 1322(o);

(iii) A small vessel or fishing vessel, except that this part applies to any discharge of ballast water from a small vessel or fishing vessel; or

(iv) A floating craft that is permanently moored to a pier, including, but not limited to, a floating casino, hotel, restaurant, or bar; or

(2) That results from, or contains material derived from, an activity other than the normal operation of the vessel, such as material resulting from an industrial or manufacturing process onboard the vessel; or

(3) If compliance with this part would compromise the safety of life at sea.

(c) *Area of coverage.* The standards in this part apply to any vessel identified in paragraph (a) of this section, not otherwise excluded in paragraph (b) of this section, while operating in the waters of the United States or the waters of the contiguous zone.

(d) *Effective date.* (1) The standards in this part are effective beginning on the date upon which regulations promulgated by the Secretary governing the design, construction, testing, approval, installation, and use of marine pollution control devices as necessary to ensure compliance with the standards are final, effective, and enforceable.

(2) As of the effective date identified in paragraph (d)(1) of this section, the requirements of the Vessel General Permit and all regulations promulgated by the Secretary pursuant to section 1101 of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (16 U.S.C. 4711), including the regulations contained in 46 CFR 162.060 and 33 CFR part 151 subparts C and D, as in effect on December 3, 2018, shall be deemed repealed and have no force or effect.

§ 139.2 Definitions.

The following definitions apply for the purposes of this part. Terms not defined in this section have the meaning as defined under the Clean Water Act (CWA) and applicable regulations.

Active discharge of biofouling means the discharge of biofouling from a vessel resulting from in-water cleaning activities.

Administrator means the Administrator of the Environmental Protection Agency.

Anti-fouling coating means a coating or paint designed to prevent, repel, or facilitate the detachment of biofouling from hull and niche areas that are typically or occasionally submerged.

Anti-fouling system means a coating, paint, surface treatment, surface, or device that is used on a vessel to control or prevent attachment of organisms.

Aquatic nuisance species (ANS) means a nonindigenous species that threatens the diversity or abundance of a native species; the ecological stability of waters of the United States or the waters of the contiguous zone; or a commercial, agricultural, aquacultural, or recreational activity that is dependent on waters of the United States or the waters of the contiguous zone.

Ballast tank means any tank or hold on a vessel used for carrying ballast water, whether or not the tank or hold was designed for that purpose.

Ballast water means any water, to include suspended matter and other materials taken onboard a vessel, to control or maintain trim, draft, stability, or stresses of the vessel, regardless of the means by which any such water or suspended matter is carried; or taken onboard a vessel during the cleaning, maintenance, or other operation of a ballast tank or ballast water management system of the vessel. The term does not include any substance that is added to that water that is directly related to the operation of a properly functioning ballast water management system.

Ballast water exchange means the replacement of ballast water in a ballast tank using one of the following methods:

(1) Flow-through exchange, in which ballast water is flushed out by pumping in midocean water at the bottom of the tank if practicable, and continuously overflowing the tank from the top, until three full volumes of tank water have been changed.

(2) Empty and refill exchange, in which ballast water is pumped out until the pump loses suction, after which the ballast tank is refilled with water from the midocean.

Ballast water management system (BWMS) means any marine pollution control device (including all ballast water treatment equipment, ballast tanks, pipes, pumps, and all associated control and monitoring equipment) that processes ballast water to kill, render nonviable, or remove organisms; or to avoid the uptake or discharge of organisms.

Bioaccumulative means the failure to meet one or more of the criteria established in the definition of *not bioaccumulative.*

Biodegradable for the following classes of substances, means (all percentages are on a weight/weight concentration basis):

(1) For oils: At least 90% of the formulation (for any substances present above 0.1%) demonstrates, within 28 days, either the removal of at least 70% of dissolved organic carbon (DOC), production of at least 60% of the theoretical carbon dioxide, or consumption of at least 60% of the theoretical oxygen demand). Up to 5% of the formulation may be non-biodegradable but may not be bioaccumulative. The remaining 5% must be inherently biodegradable.

(2) For greases: At least 75% of the formulation (for any substances present above 0.1%) demonstrates, within 28 days, either the removal of at least 70% of DOC, production of at least 60% of the theoretical carbon dioxide, or consumption of at least 60% of the theoretical oxygen demand). Up to 25% of the formulation may be non-biodegradable or inherently biodegradable but may not be bioaccumulative.

(3) For soaps, cleaners, and detergents: A product that demonstrates, within 28 days, either the removal of at least 70% of DOC, production of at least 60% of the theoretical carbon dioxide, or consumption of at least 60% of the theoretical oxygen demand.

(4) For biocides: A compound or mixture that, within 28 days, demonstrates removal of at least 70% of DOC and production of at least 60% of the theoretical carbon dioxide.

Biofouling means the accumulation of aquatic organisms, such as microorganisms, plants, and animals, on surfaces and structures immersed in or exposed to the aquatic environment.

Broom clean means a condition in which care has been taken to prevent or eliminate any visible concentration of tank or cargo residues, so that any remaining tank or cargo residues consist only of dust, powder, or isolated and random pieces, none of which exceeds one inch in diameter.

Captain of the Port (COTP) Zone means such zone as established by the Secretary or Commandant of the Coast Guard pursuant to sections 501, 503, and 504 of title 14, United States Code, as reorganized in Title I of the Frank LoBiondo Coast Guard Authorization Act of 2018).

Commercial vessel means, except as the term is used in § 139.10(g), any vessel used in the business of transporting property for compensation or hire, or in transporting property in the business of the owner, lessee, or operator of the vessel. As used in § 139.10(g), the term *commercial vessel* means a vessel operating between:

(1) Two ports or places of destination within the Pacific Region; or

(2) A port or place of destination within the Pacific Region and a port or place of destination on the Pacific Coast of Canada or Mexico north of parallel 20 degrees north latitude, inclusive of the Gulf of California.

Constructed with respect to a vessel means a stage of construction when one of the following occurs:

(1) The keel of a vessel is laid;

(2) Construction identifiable with the specific vessel begins;

(3) Assembly of the vessel has commenced and comprises at least 50 tons or 1 percent of the estimated mass of all structural material, whichever is less; or

(4) The vessel undergoes a major conversion.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Discharge means *discharge incidental to the normal operation of a vessel* as defined in this section.

Discharge incidental to the normal operation of a vessel means a discharge, including:

(1) Graywater, bilgewater, cooling water, weather deck runoff, ballast water, oil water separator effluent, and any other pollutant discharge from the operation of a marine propulsion system, shipboard maneuvering system, crew habitability system, or installed major equipment, such as an aircraft carrier elevator or a catapult, or from a protective, preservative, or absorptive application to the hull of the vessel; and

(2) A discharge in connection with the testing, maintenance, and repair of a system described in clause (1):

(i) Whenever the vessel is waterborne; and does not include:

(A) A discharge of rubbish, trash, garbage, or other such material discharged overboard;

(B) An air emission resulting from the operation of a vessel propulsion system, motor driven equipment, or incinerator; or

(3) A discharge that is not covered by § 122.3 of this chapter (as in effect on February 10, 1996).

Discharge of oil in such quantities as may be harmful means any discharge of oil, including an oily mixture, in such quantities identified in 40 CFR 110.3 and excluding those discharges specified in 40 CFR 110.5.

Empty ballast tank means a tank that has previously held ballast water that has been drained to the limit of the functional or operational capabilities of the tank (such as loss of pump suction); is recorded as empty on a vessel log; and may contain unpumpable residual ballast water and sediment.

Environmentally acceptable lubricant (EAL) means a lubricant or hydraulic fluid, including any oil or grease, that is ''biodegradable,'' ''minimally-toxic,'' and ''not bioaccumulative,'' as these terms are defined in this section.

*Exclusive Economic Zone (*EEZ*)* means the area established by Presidential Proclamation Number 5030, dated March 10, 1983, that extends from the base line of the territorial sea of the United States seaward 200 nautical miles, and the equivalent zone of Canada.

Existing vessel means a vessel constructed, or where construction has begun, prior to the date identified in regulations promulgated by the Secretary as described in § 139.1(e).

Federally-protected waters means any waters of the United States or the waters of the contiguous zone subject to Federal protection, in whole or in part, for conservation purposes, located within any area listed in appendix A, as designated under:

(1) National Marine Sanctuaries designated under the National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.*);

(2) Marine National Monuments designated under the Antiquities Act of 1906;

(3) A unit of the National Park System, including but not limited to National Preserves and National Monuments, designated by the National Park Service within the U.S. Department of the Interior;

(4) A unit of the National Wildlife Refuge System, including Wetland Management Districts, Waterfowl Production Areas, National Game Preserves, Wildlife Management Areas, and National Fish and Wildlife Refuges designated under the National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997;

(5) National Wilderness Areas designated under the Wilderness Act of 1964 (16 U.S.C. 1131–1136); and

(6) Any component designated under the National Wild and Scenic Rivers Act of 1968, 16 U.S.C. 1273.

Ferry means a vessel that is used on a regular schedule to:

(1) Provide transportation only between places than are not more than 300 miles apart; and

(2) Transport only:

(i) Passengers; or

(ii) Vehicles or railroad cars that are being used, or have been used, in transporting passengers or goods.

Fire protection equipment includes all components used for fire protection including but not limited to firemain systems, sprinkler systems, extinguishers, and firefighting agents such as foam.

Graywater means drainage from galley, shower, laundry, bath, water fountain, and sink drains, and other similar sources.

Great Lakes means Lake Ontario, Lake Erie, Lake Huron (including Lake Saint Clair), Lake Michigan, Lake Superior, and the connecting channels (Saint Mary's River, Saint Clair River, Detroit River, Niagara River, and Saint Lawrence River to the Canadian border), and includes all other bodies of water within the drainage basin of such lakes and connecting channels.

Great Lakes State means any of the states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin.

Gross register tonnage (GRT) means the gross tonnage measurement of the vessel under the Regulatory Measurement System.

Gross tonnage (GT) means the gross tonnage measurement of the vessel under the Convention Measurement System.

Impaired waterbody means a waterbody identified by a State, tribe, or EPA pursuant to section 303(d) of the CWA as not meeting applicable State or Tribal water quality standards (these waters are called ''water quality limited segments'' under 40 CFR 130.2(j)) and includes both waters with approved or established Total Maximum Daily Loads (TMDLs) and those for which a TMDL has not yet been approved or established.

Inherently biodegradable means the property of being able to be biodegraded when subjected to sunlight, water, and naturally occurring microbes to the following level: greater than 70% biodegraded after 28 days using Organization for Economic Cooperation and Development (OECD) Test Guidelines 302C or greater than 20% but less than 60% biodegraded after 28 days using OECD Test Guidelines 301 A–F.

Internal waters means:

(1) With respect to the United States, the waters shoreward of the territorial sea baseline, including waters of the Great Lakes extending to the maritime boundary with Canada; and

(2) With respect to any other nation, the waters shoreward of its territorial sea baseline, as recognized by the United States.

In-water cleaning with capture (IWCC) means the use and operation of a cleaning system for vessel surfaces that is designed to capture and transport coatings and biofouling organisms to an adjacent barge or shore-based facility for collection and processing.

In-water cleaning without capture means any in-water cleaning of vessel surfaces that does not use in-water cleaning with capture.

Live or living, notwithstanding any other provision of law (including regulations), does not:

(1) Include an organism that has been rendered nonviable; or

(2) Preclude the consideration of any method of measuring the concentration of organisms in ballast water that are capable of reproduction.

Macrofouling means biofouling caused by the attachment and subsequent growth of visible plants and animals on surfaces and structures immersed in or exposed to the aquatic environment. Macrofouling includes large, distinct multicellular individual or colonial organisms visible to the human eye, such as barnacles, tubeworms, mussels, fronds/filaments of algae, bryozoans, sea squirts, and other large attached, encrusting, or mobile organisms.

Major conversion means a conversion of an existing vessel:

(1) That substantially alters the dimensions or carrying capacity of the vessel; or

(2) That changes the type of the vessel; or

(3) The intent of which, in the opinion of the government of the country under whose authority the vessel is operating, is substantially to prolong its life; or

(4) Which otherwise so alters the vessel that, if it were a new vessel, it would become subject to relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) not applicable to it as an existing vessel.

Marine Growth Prevention System (MGPS) means an anti-fouling system used for the prevention of biofouling accumulation in seawater piping systems and sea chests.

Marine Inspector means any person from the civilian or military branch of the Coast Guard assigned under the superintendence and direction of an Officer in Charge, Marine Inspection, or any other person as may be designated for the performance of duties with respect to inspection, enforcement, and administration of Subtitle II of Title 46, United States Code, Title 46 and Title 33 United States Code, and regulations issued under these statutes.

Marine pollution control device (MPCD) means any equipment or management practice (or combination of equipment and management practice) for installation and use onboard a vessel that is:

(1) Designed to receive, retain, treat, control, or discharge a discharge incidental to the normal operation of a vessel; and

(2) Determined by the Administrator and the Secretary to be the most effective equipment or management practice (or combination of equipment and a management practice) to reduce the environmental impacts of the discharge, consistent with the factors considered in developing the standards in this part.

Master means the officer having command of a vessel.

Microfouling means biofouling caused by bacteria, fungi, microalgae, protozoans, and other microscopic organisms on structures and surfaces immersed in or exposed to the aquatic environment that creates a biofilm, also called a slime layer.

Midocean means greater than 200 nautical miles (NM) from any shore, except when a ballast water exchange or saltwater flush outside of 50 NM is authorized in this part, then it means greater than 50 NM from any shore.

Minimally-toxic means, for lubricants (all percentages are on a weight/weight basis):

(1) If both the complete formulation and the main constituents (that is constituents making up greater than or equal to 5% of the complete formulation) are evaluated, then the acute aquatic toxicity of lubricants, other than greases and total loss lubricants, must be at least 100 mg/L and the LC50 of greases and total loss lubricants must be at least 1000 mg/L; or

(2) If each constituent is evaluated, rather than the complete formulation and main constituents, then for each constituent present above 0.1%: up to 20% of the formulation can have an LC50 greater than 10 mg/L but less than 100 mg/L and an NOEC greater than 1 mg/L but less than 10 mg/L; up to 5% of the formulation can have an LC50 greater than 1 mg/L but less than 10 mg/L and an NOEC greater than 0.1 mg/L but less than 1 mg/L; and up to 1% of the formulation can have an LC50 less than 1 mg/L and an NOEC less than 0.1 mg/L.

Minimally-toxic, phosphate-free, and biodegradable means properties of a substance or mixture of substances that:

(1) Have an acute aquatic toxicity value corresponding to a concentration greater than 10 ppm;

(2) Do not produce residuals with an LC50 less than 10 ppm;

(3) Are not bioaccumulative;

(4) Do not cause the pH of the receiving water to go below 6.0 or above 9.0;

(5) Contain, by weight, 0.5% or less of phosphates or derivatives of phosphate; and

(6) Are biodegradable.

Minimize means to reduce or eliminate to the extent achievable using any control measure that is technologically available and economically practicable and achievable and supported by demonstrated best management practices such that compliance can be documented in shipboard logs and plans.

New ferry means a ferry that is constructed after the effective date of USCG regulations promulgated pursuant to CWA section 312(p)(5)(A)(i).

New Laker means a vessel 3,000 GT and above, and that operates exclusively in the Great Lakes and the St. Lawrence River west of a rhumb line drawn from Cap des Rosiers to Pointe-de-l'Ouest (West Point), Anticosti Island, and west of a line along 63° W longitude from Anticosti Island to the north shore of the St. Lawrence River, and constructed after the effective date of USCG regulations promulgated pursuant to CWA section 312(p)(5)(A)(i).

Niche areas means a subset of the submerged surface area on a vessel that may be more susceptible to biofouling than the main hull due to structural complexity, different or variable hydrodynamic forces, susceptibility to anti-fouling coating wear or damage, or inadequate or no protection by an anti-fouling system.

Not bioaccumulative means any of the following:

(1) The partition coefficient in the marine environment is log KOW less than 3 or greater than 7;

(2) The molecular mass is greater than 800 Daltons;

(3) The molecular diameter is greater than 1.5 nanometer;

(4) The bioconcentration factor (BCF) or bioaccumulation factor (BAF) is less than 100 L/kg; or

(5) The polymer with molecular weight fraction below 1,000 g/mol is less than 1%.

Oil means oil of any kind or in any form, including but not limited to any petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Oily mixture means a mixture, in any form, with any oil content, including but not limited to:

(1) Slops from bilges;

(2) Slops from oil cargoes (such as cargo tank washings, oily waste, and oily refuse);

(3) Oil residue; and

(4) Oily ballast water from cargo or fuel oil tanks.

Oil-to-sea interface means any seal or surface on shipboard equipment where the design is such that oil or oily mixtures can escape directly into surrounding waters. Oil-to-sea interfaces are found on equipment that is subject to submersion as well as equipment above the surface line that extends overboard or is mounted to the exterior of the hull.

Organism means an animal, including fish and fish eggs and larvae; a plant; a pathogen; a microbe; a virus; a prokaryote (including any archean or bacterium); a fungus; and a protist.

Pacific Region means any Federal or State water adjacent to the State of Alaska, California, Hawaii, Oregon, or Washington; and extending from shore. The term includes the entire exclusive economic zone (as defined in section 1001 of the Oil Pollution Act of 1990 (33 U.S.C. 2701)) adjacent to each Pacific Region State identified herein.

Passenger vessel means a vessel of at least 100 gross tons:

(1) Carrying more than 12 passengers, including at least one passenger for hire;

(2) That is chartered and carrying more than 12 passengers;

(3) That is a submersible vessel carrying at least one passenger for hire; or

(4) That is a ferry carrying a passenger.

Passive discharge of biofouling means the discharge of biofouling from a vessel (for example, sloughing) during a period in which the vessel is not undergoing active cleaning activities.

Port or place of destination means a port or place to which a vessel is bound to anchor, to moor, or be otherwise secured.

Reception facility refers to any fixed, floating, or mobile facility capable of receiving wastes and residues from vessels and fit for that purpose.

Render nonviable means, with respect to an organism in ballast water, the action of a ballast water management system that renders the organism permanently incapable of reproduction following treatment.

Saltwater flush means the addition of as much midocean water into each empty ballast tank of a vessel as is safe for the vessel and crew; and the mixing of the flush water with residual ballast water and sediment through the motion of the vessel; and the discharge of that mixed water, such that the resultant residual water remaining in the tank has the highest salinity possible; and is at least 30 parts per thousand. A saltwater flush may require more than one fill-mix-empty sequence, particularly if only small quantities of water can be safely taken onboard a vessel at one time.

Seagoing vessel means a vessel in commercial service that operates beyond either the boundary line established by 46 CFR part 7 or the St. Lawrence River west of a rhumb line drawn from Cap des Rosiers to Pointe-de-l'Ouest (West Point), Anticosti Island, and west of a line along 63° W longitude from Anticosti Island to the north shore of the St. Lawrence River. It does not include a vessel that navigates exclusively on internal waters.

Seawater piping system means a system onboard a vessel that provides seawater for other vessel uses (*e.g.,* ballast, engines, hydraulic systems, firefighting capacity, cleaning equipment, air conditioning, refrigeration, toilet systems) and includes any sea chest, grate, and similar appurtenances (*e.g.,* strainers, filters, valves). Some components of a seawater piping system including sea chests, sea inlet pipes, and overboard discharges are also considered niche areas.

Secretary means the Secretary of the department in which the United States Coast Guard (USCG) is operating.

Small vessel or fishing vessel means a vessel with a vessel length that is less than 79 feet; or a fishing vessel, fish processing vessel, or fish tender vessel (as those terms are defined in section 2101 of title 46, United States Code), regardless of the vessel length.

Toxic or hazardous materials means any toxic pollutant as defined in 40 CFR 401.15 or any hazardous material as defined in 49 CFR 171.8.

Underway means a vessel is not at anchor, or made fast to the shore, or aground.

Vessel General Permit (VGP) means the permit that is the subject of the notice of final permit issuance entitled ''Final National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges Incidental to the Normal Operation of a Vessel'' (**Federal Register** publication on April 12, 2013).

Vessel length means the horizontal distance between the foremost part of a vessel's stem to the aftermost part of its stern, excluding fittings and attachments.

Visible sheen means, with respect to oil and oily mixtures, a silvery or metallic sheen or gloss, increased reflectivity, visual color, iridescence, or an oil slick on the surface of the water.

Voyage means any transit by a vessel traveling from or destined for any United States port or place.

§ 139.3 Other Federal laws.

(a) Except as expressly provided in this part, nothing in this part affects the applicability to a vessel of any other provision of Federal law, including:

(1) Sections 311 and 312 of the Federal Water Pollution Control Act (33 U.S.C. 1321 *et seq.* and 33 U.S.C. 1322 *et seq.*), also known as the CWA;

(2) The Act to Prevent Pollution from Ships (33 U.S.C. 1901 *et seq.*);

(3) Title X of the Coast Guard Authorization Act of 2010 (33 U.S.C. 3801 *et seq.*), also known as the Clean Hulls Act;

(4) The Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 *et seq.*); and

(5) The National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.*) and implementing regulations found at 15 CFR part 922 and 50 CFR part 404.

(b) Nothing in this part affects the authority of the Secretary of Commerce or the Secretary of the Interior to administer any land or waters under the administrative control of the Secretary of Commerce or the Secretary of the Interior, respectively.

(c) Nothing in this part shall be construed to affect, supersede, or relieve the master of any otherwise applicable requirements or prohibitions associated with a vessel's right to innocent passage as provided for under customary international law.

Subpart B—General Standards for Discharges Incidental to the Normal Operation of a Vessel

§ 139.4 General operation and maintenance.

(a) The requirements in paragraph (b) of this section apply to any discharge incidental to the normal operation of a vessel subject to regulation under this part, including but not limited to those discharges identified in subpart C of this part.

(b) Vessels must implement the following practices:

(1) Minimize discharges through management practices including but not limited to storage onboard the vessel, proper storage or transfer of materials, or reduced production of discharge.

(2) Discharge while underway when practicable and as far from shore as practicable.

(3) Addition of any materials to a discharge, other than for treatment of the discharge, that is not incidental to the normal operation of the vessel is prohibited.

(4) Dilution of any discharge for the purpose of meeting any standard in this part is prohibited.

(5) Any material used onboard that will be subsequently discharged (*e.g.,* disinfectants, cleaners, biocides, coatings, sacrificial anodes) must:

(i) Be used according to manufacturer specifications and only in the amount necessary to perform the intended function of that material;

(ii) Not contain any materials banned for use in the United States; and

(iii) If subject to FIFRA registration, be used according to the FIFRA label. Proper use includes labeling requirements for proper application sites, rates, frequency of application, and methods; maintenance; removal; and storage and disposal of wastes and containers.

(6) To minimize and prevent discharge of cargo or other onboard materials, cargo must be containerized or covered except for hopper barges without a fixed cover or where covering cargo would negatively impact safety of the vessel, risk loss of life at sea, or otherwise interfere with essential vessel operations.

(7) To minimize and prevent discharge of toxic or hazardous materials, vessels must:

(i) Store toxic or hazardous materials in appropriately sealed, labeled, and secured containers located in areas of the vessel that minimize exposure to ocean spray and precipitation consistent with vessel design, unless the master determines this would interfere with essential vessel operations or safety of the vessel or crew, or would violate any applicable regulations that establish specifications for safe transportation, handling, carriage, and storage of toxic or hazardous materials.

(ii) Ensure containers holding toxic or hazardous materials are not overfilled and incompatible materials (*i.e.,* substances which, if mixed, will create hazards greater than posed by the individual substances) are not mixed.

(8) The overboard discharge or disposal of any containers holding toxic or hazardous materials is prohibited.

(9) Prior to washing any compartment, tank, cargo or other space and discharging washwater overboard from the area, that space must be in broom clean condition or its equivalent.

(10) Topside surfaces (*e.g.,* exposed decks, hull above waterline, tank, cargo, and related appurtenances) must be maintained to minimize the discharge of cleaning compounds, paint chips, non-skid material fragments, and other materials associated with exterior surface preservation.

(11) Painting and coating techniques on topside surfaces must minimize the discharge of paints, coatings, surface preparation materials, and similar substances.

(12) Discharge of unused paint and coatings is prohibited.

(13) Any equipment that may release, drip, leak, or spill oil or oily mixtures, fuel, or other toxic or hazardous materials, including to the bilge, must be maintained to minimize or eliminate the discharges.

§ 139.5 Biofouling management.

(a) The requirements in paragraph (b) of this section apply to any vessel subject to regulation under this part.

(b) A biofouling management plan must be developed to minimize the discharge of biofouling organisms. The plan elements must prioritize procedures and strategies to prevent macrofouling, thereby minimizing the potential for the introduction and spread of ANS. The plan must describe the vessel-specific anti-fouling systems and biofouling management practices necessary to comply with the requirements in this section. See §§ 139.13, 139.14, 139.22, 139.28, and 139.29 for additional biofouling management requirements.

§ 139.6 Oil management.

(a) The requirements in paragraphs (b) through (e) of this section apply to vessel equipment and operations that use or discharge oil or oily mixtures.

(b) The discharge of used or spent oil no longer being used for its intended purpose is prohibited.

(c) The discharge of oil in such quantities as may be harmful is prohibited.

(d) During fueling, maintenance, and other vessel operations, control and response measures must be used to prevent, minimize, and contain spills and overflows.

(e) An environmentally acceptable lubricant (EAL) must be used in any oil-to-sea interface unless such use is technically infeasible. Operators of new build vessels should endeavor to use seawater-based systems for stern tube lubrication to eliminate the discharge of oil from these interfaces to the aquatic environment.

Subpart C—Standards for Specific Discharges Incidental to the Normal Operation of a Vessel

§ 139.10 Ballast tanks.

(a) *Applicability.* Except for any vessel otherwise excluded in paragraph (b) of this section, the requirements in paragraphs (c) through (h) of this section

apply to any vessel equipped with one or more ballast tanks.

(b) *Exclusions.* The requirements of this section do not apply to the following vessels:

(1) A vessel that continuously takes on and discharges ballast water in a flow-through system, if the Administrator determines that system cannot materially contribute to the spread or introduction of ANS into waters of the United States;

(2) A vessel in the National Defense Reserve Fleet scheduled for disposal, if the vessel does not have an operable ballast water management system (BWMS);

(3) A vessel that discharges ballast water consisting solely of water taken onboard from a public or commercial source that, at the time the water is taken onboard, meets the applicable requirements or permit requirements of the Safe Drinking Water Act (42 U.S.C. 300f *et seq.*);

(4) A vessel that carries all permanent ballast water in sealed tanks that are not subject to discharge; or

(5) A vessel that only discharges ballast water to a reception facility.

(c) *Ballast Water Best Management Practices.* (1) Any vessel equipped with ballast tanks must minimize the introduction and spread of aquatic nuisance species (ANS) by adhering to the following practices:

(i) Maintain a ballast water management plan that addresses both the uptake and discharge of ballast water. The plan must describe the vessel-specific BWMSs and practices necessary to comply with the requirements in this section.

(ii) Minimize the use of gravity to drain ballast tanks in port.

(iii) Use high sea suction in port or where clearance to the bottom of the waterbody is less than 5 meters to the lower edge of the sea chest, as practicable.

(iv) Avoid the discharge or uptake of ballast water in areas with coral reefs. Discharge and uptake should be conducted as far from coral reefs as practicable.

(v) Periodically clean ballast tanks to remove sediment. Discharge of sediment from ballast tank cleaning is prohibited.

(vi) Maintain, and keep fully intact, sea chest screens.

(2) Any new Laker equipped with ballast tanks must install, operate, and maintain a BWMS that has been type-approved by the USCG.

(d) *Ballast Water Discharge Standard.* Unless exempted in paragraph (d)(3) of this section, any ballast water discharge must meet the following numeric discharge standard:

(1) Biological parameters (expressed as instantaneous maximums).

(i) Organisms greater than or equal to 50 micrometers in minimum dimension: less than 10 living organisms per cubic meter.

(ii) Organisms less than 50 micrometers and greater than or equal to 10 micrometers: less than 10 living organisms per milliliter (mL).

(iii) Toxicogenic *Vibrio cholerae* (serotypes O1 and O139): less than 1 colony-forming unit (cfu) per 100 mL.

(iv) *Escherichia coli:* a concentration of less than 250 cfu, or Most Probable Number (MPN), per 100 mL.

(v) Intestinal enterococci: a concentration of less than 100 cfu, or MPN, per 100 mL.

(2) Biocide parameters (expressed as instantaneous maximums).

(i) Chlorine dioxide: for any discharge from a BWMS using chlorine dioxide, chlorine dioxide must not exceed 200 μg/L.

(ii) Total residual oxidizers: for any discharge from a BWMS using chlorine or ozone, total residual oxidizers must not exceed 100 μg/L.

(iii) Peracetic acid: for any discharge from a BWMS using peracetic acid, peracetic acid must not exceed 500 μg/L.

(iv) Hydrogen peroxide: for any discharge from a BWMS using peracetic acid, hydrogen peroxide must not exceed 1,000 μg/L.

(3) Exemptions: The ballast water discharge standards in paragraphs (d)(1) and (2) of this section do not apply to any vessel that:

(i) Is less than or equal to 3,000 GT (1,600 GRT if GT is not assigned), and does not operate outside of the EEZ;

(ii) Is a non-seagoing, unmanned, unpowered barge, except any barge that is part of a dedicated vessel combination such as an integrated or articulated tug and barge unit;

(iii) Takes on and discharges ballast water exclusively in the contiguous portions of a single COTP Zone;

(iv) Does not travel more than 10 NM and passes through no locks;

(v) Discharges ballast water at the same location where that ballast water originated, provided that no mixing with unmanaged ballast water or sediment from other areas has occurred;

(vi) Operates exclusively in the Great Lakes and the St. Lawrence River west of a rhumb line drawn from Cap des Rosiers to Pointe-de-l'Ouest (West Point), Anticosti Island, and west of a line along 63° W. longitude from Anticosti Island to the north shore of the St. Lawrence River;

(vii) Is enrolled in the USCG Shipboard Technology Evaluation Program (STEP); or

(viii) Discharges ballast water prior to an applicable ballast water discharge standard compliance date established in regulations promulgated by the Secretary as described in 139.1(d).

(e) *Ballast Water Exchange and Saltwater Flush.* Except for any vessel identified in paragraph (f) or (g) of this section, prior to an applicable ballast water discharge standard compliance date established in regulations promulgated by the Secretary as described in § 139.1(d), any vessel must meet the requirements in paragraphs (e)(1) and (2) of this section unless excluded under paragraph (e)(3) of this section.

(1) Any vessel that carries ballast water taken on in areas less than 200 NM from any shore that will subsequently operate outside the EEZ and more than 200 NM from any shore must:

(i) Conduct ballast water exchange in waters not less than 200 NM from any shore prior to discharging that ballast water; and

(ii) Commence ballast water exchange not less than 200 NM from any shore and as early in the vessel voyage as practicable.

(2) For any ballast tank that is empty or contains unpumpable residual water on a vessel bound for a port or place of destination subject to the jurisdiction of the United States, the master must, prior to arriving at that port or place of destination, either:

(i) Seal the tank so that there is no discharge or uptake and subsequent discharge of ballast water, or

(ii) Conduct a ballast water exchange or saltwater flush:

(A) Not less than 200 NM from any shore for a voyage originating outside the United States or Canadian EEZ; or

(B) Not less than 50 NM from any shore for a voyage originating within the United States or Canadian EEZ.

(3) Exceptions: Paragraphs (e)(1) and (2), do not apply under any of the following circumstances:

(i) If the unpumpable residual waters and sediments of an empty ballast tank were subject to treatment, in compliance with applicable requirements, through a BWMS approved or accepted by the Secretary;

(ii) Except as otherwise required under this part, if the unpumpable residual waters and sediments of an empty ballast tank were sourced solely within:

(A) The same port or place of destination; or

(B) Contiguous portions of a single COTP Zone;

(iii) If complying with an applicable requirement of this paragraph (e):

(A) Would compromise the safety of the vessel; or

(B) Is otherwise prohibited by any Federal, Canadian, or international law (including regulations) pertaining to vessel safety;

(iv) If design limitations of an existing vessel prevent a ballast water exchange or saltwater flush from being conducted in accordance with this paragraph (e); or

(v) If the vessel is operating exclusively within the internal waters of the United States and Canada.

(f) *Vessels entering the Great Lakes.* (1) Ballast Water Exchange: Except as provided in paragraph (f)(2) of this section, any vessel entering the St. Lawrence Seaway through the mouth of the St. Lawrence River must conduct a complete ballast water exchange or saltwater flush:

(i) Not less than 200 NM from any shore for a voyage originating outside the EEZ; or

(ii) Not less than 50 NM from any shore for a voyage originating within the EEZ.

(2) Exceptions: The requirements of paragraph (f)(1) of this section do not apply to any vessel if:

(i) Complying with paragraph (f)(1) of this section:

(A) Would compromise the safety of the vessel; or

(B) Is otherwise prohibited by any Federal, Canadian, or international law (including regulations) pertaining to vessel safety.

(ii) Design limitations of an existing vessel prevent a ballast water exchange from being conducted in accordance with an applicable requirement of paragraph (f)(1) of this section.

(iii) The vessel has no residual ballast water or sediments onboard.

(iv) The vessel retains all ballast water while in waters subject to the requirement.

(v) The empty ballast tanks on the vessel are sealed in a manner that ensures that no discharge or uptake occurs, and any subsequent discharge of ballast water is subject to the requirement.

(g) *Pacific Region.* (1) Ballast Water Exchange:

(i) Except as provided in paragraphs (g)(1)(ii) and (g)(3) of this section, any vessel that operates either between two ports or places of destination within the Pacific Region; or a port or place of destination within the Pacific Region and a port or place of destination on the Pacific Coast of Canada or Mexico north of parallel 20 degrees north latitude, inclusive of the Gulf of California, must conduct a complete ballast water exchange in waters more than 50 NM from shore.

(ii) Exemptions: The requirements of paragraph (g)(1)(i) of this section do not apply to any vessel:

(A) Using, in compliance with applicable requirements, a type-approved BWMS approved or accepted by the Secretary.

(B) Voyaging:

(*1*) Between or to a port or place of destination in the State of Washington, if the ballast water to be discharged from the commercial vessel originated solely from waters located between the parallel 46 degrees north latitude, including the internal waters of the Columbia River, and the internal waters of Canada south of parallel 50 degrees north latitude, including the waters of the Strait of Georgia and the Strait of Juan de Fuca;

(*2*) Between ports or places of destination in the State of Oregon, if the ballast water to be discharged from the commercial vessel originated solely from waters located between the parallel 40 degrees north latitude and the parallel 50 degrees north latitude;

(*3*) Between ports or places of destination in the State of California within the San Francisco Bay area east of the Golden Gate Bridge, including the Port of Stockton and the Port of Sacramento, if the ballast water to be discharged from the commercial vessel originated solely from ports or places within that area;

(*4*) Between the Port of Los Angeles, the Port of Long Beach, and the El Segundo offshore marine oil terminal, if the ballast water to be discharged from the commercial vessel originated solely from the Port of Los Angeles, the Port of Long Beach, or the El Segundo offshore marine oil terminal;

(*5*) Between a port or place of destination in the State of Alaska within a single COTP Zone;

(*6*) Between ports or places of destination in different counties of the State of Hawaii, if the vessel conducts a complete ballast water exchange in waters that are more than 10 NM from shore and at least 200 meters deep; or

(*7*) Between ports or places of destination within the same county of the State of Hawaii, if the vessel does not transit outside State marine waters during the voyage.

(2) Low-Salinity Ballast Water:

(i) Except as provided in paragraphs (g)(2)(ii) and (g)(3) of this section, a complete ballast water exchange must be conducted for any commercial vessel that transports ballast water sourced from waters with a measured salinity of less than 18 parts per thousand and voyages to a Pacific Region port or place of destination with a measured salinity of less than 18 parts per thousand:

(A) Not less than 50 NM from shore, if the ballast water was sourced from a Pacific Region port or place of destination.

(B) More than 200 NM from shore, if the ballast water was not sourced from a Pacific Region port or place of destination.

(ii) Exception: The requirements of paragraph (g)(2)(i) of this section do not apply to any vessel voyaging to a port or place of destination in the Pacific Region that is using, in compliance with applicable requirements, a type-approved BWMS accepted by the Secretary, or a type-approved BWMS approved by the Secretary to achieve the following numeric discharge standard for biological parameters (expressed as instantaneous maximums):

(A) Organisms greater than or equal to 50 micrometers in minimum dimension: less than 1 living organism per 10 cubic meters.

(B) Organisms less than 50 micrometers and greater than or equal to 10 micrometers: Less than 1 living organisms per 10 milliliters (mL).

(C) Toxicogenic *Vibrio cholerae* (serotypes O1 and O139): less than 1 colony-forming unit (cfu) per 100 mL or less than 1 cfu per gram of wet weight of zoological samples.

(D) *Escherichia coli:* less than 126 cfu, or MPN, per 100 mL.

(E) Intestinal enterococci: less than 33 cfu, or MPN, per 100 mL.

(3) General Exceptions: The requirements of paragraphs (g)(1) and (2) of this section do not apply to a commercial vessel if:

(i) Complying with the requirement would compromise the safety of the commercial vessel.

(ii) If design limitations of an existing vessel, prevent a ballast water exchange from being conducted in accordance with paragraphs (g)(1) and (2) of this section, as applicable.

(iii) The commercial vessel:

(A) Has no residual ballast water or sediments onboard; or

(B) Retains all ballast water while in waters subject to those requirements.

(iv) Empty ballast tanks on the commercial vessel are sealed in a manner that ensures that:

(A) No discharge or uptake occurs; and

(B) Any subsequent discharge of ballast water is subject to those requirements.

(h) *Federally-protected waters.* Additional standards applicable to discharges from ballast tanks when a vessel is operating in federally-protected waters are contained in § 139.40(b).

§ 139.11 Bilges.

(a) The requirements in paragraphs (b) through (d) of this section applies to bilgewater, which is the discharge of wastewater from the bilge consisting of water and residue that accumulates in a lower compartment of the vessel's hull below the waterline. This includes, but is not limited to, any water and residue from a cargo area that comes into contact with oily materials or a below-deck parking area or other storage area for motor vehicles or other motorized equipment.

(b) The discharge of bilgewater from any vessel must not contain any flocculants or other additives except when used with an oily water separator or to maintain or clean equipment. The use of any additives to remove the appearance of a visible sheen is prohibited.

(c) For any vessel of 400 GT and above, the discharge of bilgewater must:

(1) Occur when the vessel is underway;

(2) Not have an oil content that exceeds 15 ppm; and

(3) If technologically feasible, occur at least 1 NM from shore.

(d) Additional standards applicable to discharges from bilges when a vessel is operating in federally-protected waters are contained in § 139.40(c).

§ 139.12 Boilers.

(a) The requirements in paragraphs (b) and (c) of this section apply to discharges resulting from boiler blowdown.

(b) The discharge from boiler blowdown must be minimized in port.

(c) Additional standards applicable to discharges from boilers when a vessel is operating in federally-protected waters are contained in § 139.40(d).

§ 139.13 Cathodic protection.

(a) The requirements in paragraph (b) of this section apply to discharges resulting from a vessel's cathodic corrosion control protection device, including but not limited to sacrificial anodes and impressed current cathodic protection (ICCP) systems.

(b) Spaces between any flush-fit anode and backing must be filled to remove potential hotspots for biofouling organisms.

(c) The vessel operator must consider using, but is not required to use, less toxic metals when selecting sacrificial anodes.

§ 139.14 Chain lockers.

(a) The requirements in paragraphs (b) through (e) of this section apply to accumulated biological organisms, sediment, precipitation, and seawater that is emptied from the compartment used to store the anchor chain on a vessel and are intended to prevent the discharge of accumulated biological organisms, sediment, precipitation, and seawater when deploying the anchor in a new port or place of destination.

(b) Anchors and anchor chains must be rinsed of biofouling organisms and sediment when the anchor is retrieved.

(c) The discharge of biological organisms, sediment, precipitation, and seawater from any chain locker is prohibited in port.

(d) Anchors and anchor chains used beyond waters of the contiguous zone must be rinsed of biofouling organisms and sediment prior to entering the waters of the contiguous zone. This requirement may be satisfied by rinsing when the anchor is retrieved at the commencement of the voyage or when the anchor was last retrieved on a previous voyage, so long as the rinsing occurs after the last use of the anchor beyond waters of the contiguous zone.

(e) Additional standards applicable to a discharge from chain lockers when a vessel is operating in federally-protected waters are contained in § 139.40(e).

§ 139.15 Decks.

(a) The requirements in paragraphs (b) through (i) of this section apply to the discharge of washdown and runoff from decks, well decks, and bulkhead areas, including but not limited to precipitation, condensation, seawater spray and wash over, and flooding, as well as waters pumped from below deck on a barge.

(b) Coamings or drip pans must be used for machinery that is expected to leak or otherwise release oil on the deck; accumulated oil must be collected.

(c) Where required by an applicable international treaty or convention or the Secretary, the vessel must be fitted with and use physical barriers (*e.g.,* spill rails, scuppers and scupper plugs) during any washdown.

(d) Control measures must be used to minimize the introduction of on-deck debris, garbage, residue, spills, floating solids, visible foam, halogenated phenolic compounds, dispersants, and surfactants into deck washdown and runoff.

(e) Vessel decks must be kept in broom clean condition whenever the vessel is underway and prior to any deck washdown.

(f) Discharges from deck washdowns must be minimized in port.

(g) Any soap, cleaner, or detergent used for deck washdown must be minimally-toxic, phosphate-free, and biodegradable.

(h) Barges that discharge water pumped from below deck must minimize the contact of below deck condensation with oily or toxic materials and any materials containing hydrocarbons.

(i) Additional standards applicable to discharges from decks when a vessel is operating in federally-protected waters are contained in § 139.40(f).

§ 139.16 Desalination and purification systems.

(a) The requirements in paragraph (b) of this section apply to discharges from onboard desalination and purification systems used to generate freshwater from seawater or otherwise purify water.

(b) The discharge resulting from the cleaning of desalination and purification systems with toxic or hazardous materials is prohibited.

§ 139.17 Elevator pits.

(a) The requirements in paragraph (b) of this section apply to the liquid that accumulates in, and is discharged from, the sumps of elevator wells.

(b) The discharge of untreated accumulated water and sediment from any elevator pit is prohibited.

§ 139.18 Exhaust gas emission control systems.

(a) *Applicability.* The requirements in paragraphs (b) through (d) of this section apply to discharges from the operation and cleaning of any exhaust gas cleaning system (EGCS) and exhaust gas recirculation (EGR) system.

(b) *Discharge requirements.* Unless excluded in paragraph (c) of this section, any discharge identified in paragraph (a) of this section must meet the following discharge requirements.

(1) *pH.*

(i) The discharge must meet one of the following requirements:

(A) The discharge must have a pH of no less than 6.5 as measured at the vessel's overboard discharge point with the exception that during maneuvering and transit, the maximum difference of two pH units is allowed between inlet water and overboard discharge values; or

(B) The pH discharge limit is the value that will achieve a minimum pH of 6.5 at 4 meters from the overboard discharge point with the vessel stationary. This overboard pH discharge limit is to be determined at the overboard discharge monitoring point and is to be recorded as the vessel's discharge limit. The overboard pH limit can be determined either by means of direct measurement, or by using a calculation-based methodology (computational fluid dynamics or other

equally scientifically established empirical formulas).

(ii) The pH numeric discharge standard may be exceeded for up to 15 minutes in any 12-hour period.

(2) *PAHs (Polycyclic Aromatic Hydrocarbons).*

(i) The maximum continuous PAH concentration in the discharge must be no greater than 50 µg/L PAHphe (phenanthrene equivalents) above the inlet water PAH concentration. This standard applies downstream of any washwater treatment equipment including any reactant dosing unit but upstream of any seawater addition for control of pH prior to discharge.

(ii) The 50 µg/L numeric discharge standard is normalized for a discharge flow rate, before any seawater neutralization for pH control, of 45 tons (t)/megawatt-hour (MWh) where the mega-watt (MW) refers to the Maximum Continuous Rating (MCR) or 80% of the power rating of the fuel oil combustion units whose EGCS discharge water PAH is being monitored at that point. In cases where sensors are installed in a separate measurement cell, the PAH limit applies to the flow in the main discharge pipe from which the water is bypassed. This numeric discharge standard is adjusted upward or downward for different discharge flow rates, pursuant to table 1 to paragraph (b)(2)(ii) of this section.

TABLE 1 TO PARAGRAPH (b)(2)(ii)

Discharge water flowrate before any seawater addition for pH control (t/MWh)	Numeric discharge standard (µg/L PAHphe equivalents)	Measurement technology
0–1	2,250	Ultraviolet light
2.5	900	– ″ –
5	450	Fluorescence [a]
11.25	200	– ″ –
22.5	100	– ″ –
45	50	– ″ –
90	25	– ″ –

[a] For any Flow Rate greater than 2.5 t/MWh, Fluorescence technology must be used.

(iii) The continuous PAHphe numeric discharge standard may be exceeded by 100% for up to 15 minutes in any 12-hour period.

(3) *Turbidity/suspended particulate matter.*

(i) The washwater treatment system must be designed to minimize suspended particulate matter, including but not limited to heavy metals and ash.

(ii) The maximum continuous turbidity in the discharge must be no greater than 25 FNU (formazin nephlometric units) or 25 NTU (nephlometric turbidity units) or equivalent units above the inlet water turbidity. However, to account for periods of high inlet turbidity, readings must be a rolling average over a 15-minute period to a maximum of 25 FNU or NTU. This standard applies downstream of any washwater treatment equipment including any reactant dosing unit but upstream of any seawater addition for control of pH prior to discharge.

(iii) For an aggregated 15-minute period in any rolling 12-hour period, the continuous turbidity discharge limit may be exceeded by 20%.

(4) *Nitrates plus nitrites:*

(i) The washwater treatment system must prevent the discharge of nitrates plus nitrites beyond that associated with a 12% removal of NO_X from the exhaust, or beyond 60 mg/L normalized for a discharge rate of 45 tons/MWh, whichever is greater, where the MW refers to the MCR or 80% of the power rating of all those fuel oil combustion units whose EGCS discharge water nitrates plus nitrites are being monitored at that point. This standard applies downstream of any washwater treatment equipment including any reactant dosing unit but upstream of any seawater addition for control of pH prior to discharge. The 60-mg/L limit is adjusted upward for lower washwater flow rates per MWh, and vice-versa, and the applicable permit limits are contained in table 2 to paragraph (b)(4)(i) of this section.

TABLE 2 TO PARAGRAPH (b)(4)(i)

Discharge water flowrate before any seawater addition for pH control (t/MWh)	Numeric discharge standard (mg/L nitrate + nitrite)
0–1	2,700
2.5	1,080
5	540
11.25	240
22.5	120
45	60

(5) *Discharge water from temporary storage:*

(i) pH. See § 139.18(b)(1).

(ii) PAH. Maximum of 50 µg/L PAHphe before any addition of seawater (or similar) for control of pH.

(iii) Turbidity. Not greater than 25 FNU or 25 NTU or equivalent units, before any addition of seawater (or similar) for pH control.

(6) *Treatment Residuals:* Discharges of sludge or residues generated from treatment of EGCS or EGR washwater or bleed-off water are prohibited.

(c) *Exclusion.* For a vessel operating on fuel that meets the sulfur content limits specified in Regulation 14 of MARPOL Annex VI, discharge of EGR bleed-off water is excluded from paragraph (b) of this section if the vessel:

(1) Does not retain the EGR bleed-off onboard in a holding tank prior to discharge, and

(2) Is underway, and

(3) Not in port.

(d) *Prohibition.* For a vessel not operating on fuel that meets the sulfur content limits specified in Regulation 14 of MARPOL Annex VI, discharge of EGR

bleed-off water which is retained in a holding tank is prohibited unless the vessel:

(1) Is underway;

(2) Not in port; and

(3) In compliance with the discharge standard in paragraph (b) of this section.

§ 139.19 Fire protection equipment.

(a) The requirements in paragraphs (b) through (e) of this section apply to the discharge from fire protection equipment, including discharges for secondary purposes (*e.g.,* anchor and anchor chain rinsing and deck washdown). As specified in § 139.1(b)(3), these requirements do not apply to discharges from fire protection equipment when used for emergencies or when compliance with such requirements would compromise the safety of the vessel or life at sea.

(b) The discharge of fluorinated firefighting foam is prohibited unless required for certification or inspection under 46 CFR 31.10 through 31.18(c), 46 CFR 107.235(b)(4), or by the marine inspector to ensure vessel safety and seaworthiness.

(c) The discharge from fire protection equipment to ensure operability (*e.g.,* during testing, training, maintenance, inspection, or certification) is prohibited in port unless:

(1) The intake is drawn from surrounding waters or a potable water supply and contains no additives (*e.g.,* firefighting foam); or

(2) Required in port by the Secretary for certification or inspection under 46 CFR 31.10 through 31.18(c), 46 CFR 107.235(b)(4), or by the marine inspector to ensure vessel safety.

(d) The discharge from fire protection equipment for secondary uses is prohibited in port unless:

(1) The intake is drawn from surrounding waters or a potable water supply and contains no additives (*e.g.,* firefighting foam); and

(2) The discharge meets applicable requirements under this part for the secondary use.

(e) Additional requirements applicable to discharges from fire protection equipment when a vessel is operating in federally-protected waters are contained in § 139.40(g).

§ 139.20 Gas turbines.

(a) The requirements in paragraph (b) of this section apply to discharges from the washing of gas turbine components.

(b) The discharge of untreated gas turbine washwater is prohibited unless infeasible.

§ 139.21 Graywater systems.

(a) The requirements in paragraphs (b) through (g) of this section apply to discharges of graywater except for graywater from any commercial vessel on the Great Lakes that is subject to the requirements in 40 CFR part 140 and 33 CFR part 159.

(b) The introduction of kitchen waste, food, oils, and oily residues to the graywater system must be minimized.

(c) Any soaps, cleaners, detergents, and other substances used by vessel operators or provided by vessel operators to persons onboard and discharged in graywater must be minimally-toxic, phosphate-free, and biodegradable.

(d) The discharge of graywater is prohibited from any vessel:

(1) Within 3 NM from shore that voyages at least 3 NM from shore and has remaining available graywater storage capacity, unless the discharge meets the standards in paragraph (f) of this section; and

(2) Within 1 NM from shore that voyages at least 1 NM from shore but not beyond 3 NM from shore and has remaining available graywater storage capacity, unless the discharge meets the standards in paragraph (f) of this section.

(e) The discharge of graywater from the following vessels must meet the numeric discharge standard established in paragraph (f) of this section:

(1) Any new vessel of 400 GT (400 GRT if GT is not assigned) and above that is certificated to carry 15 or more persons and provides overnight accommodations to those persons;

(2) Any passenger vessel, excluding any ferry, with overnight accommodations for 500 or more persons;

(3) Any passenger vessel, excluding any ferry, with overnight accommodations for 100–499 persons unless the vessel was constructed before December 19, 2008, and does not voyage beyond 1 NM from shore; and

(4) Any new ferry authorized by the Secretary to carry 250 or more persons.

(f) A vessel identified in paragraph (d) or (e) of this section that is discharging graywater must meet the following numeric discharge standard:

(1) *Fecal coliform.*

(i) The 30-day geometric mean must not exceed 20 cfu, or MPN, per 100 mL.

(ii) Greater than 90% of samples must not exceed 40 cfu, or MPN, per 100 mL during any 30-day period.

(2) *BOD5.*

(i) The 30-day average must not exceed 30 mg/L.

(ii) The 7-day average must not exceed 45 mg/L.

(3) *Suspended solids.*

(i) The 30-day average must not exceed 30 mg/L.

(ii) The 7-day average must not exceed 45 mg/L.

(4) *pH.*

(i) Must be maintained between 6.0 and 9.0.

(ii) [Reserved]

(5) Total residual oxidizers.

(i) For any discharge from a graywater system using chlorine, total residual oxidizers must not exceed 10.0 µg/L.

(ii) [Reserved]

(g) Unless from a vessel subject to paragraph (e) of this section, the discharge of graywater from any vessel operating on the Great Lakes that is not a commercial vessel must not exceed 200 fecal coliform forming units per 100 milliliters and contain no more than 150 milligrams per liter of suspended solids.

(h) Additional standards applicable to discharges from graywater systems when a vessel is operating in federally-protected waters are contained in § 139.40(h).

§ 139.22 Hulls and associated niche areas.

(a) *Applicability.* The requirements in paragraphs (b) through (d) of this section apply to the discharge of anti-fouling coatings, biofouling organisms, and other materials from vessel hull and niche areas.

(b) *Transport and passive discharge.* The transport of attached living organisms and passive discharge of biofouling must be minimized when traveling into U.S. waters from outside the EEZ or between COTP Zones. Management measures to minimize the transport of attached living organisms and the passive discharge of biofouling are described in paragraphs (c) and (d) of this section.

(c) *Anti-fouling coatings.* (1) Anti-fouling coatings applied to the vessel must be specific to the operational profile of the vessel and the equipment to which it is applied, including, for biocidal coatings, having appropriate biocide release rates and components that are biodegradable once separated from the vessel surface.

(2) Anti-fouling coatings must be applied, maintained, and reapplied consistent with manufacturer specifications, including but not limited to the thickness, the method of application, and the lifespan of the coating.

(3) Anti-fouling coatings must not contain tributyltin (TBT) or any other organotin compound used as a biocide.

(i) Any vessel hull previously covered with an anti-fouling coating containing TBT (whether or not used as a biocide) or any other organotin compound (if used as a biocide) must:

(A) Maintain an effective overcoat that forms a barrier so that no TBT or other

organotin leaches from the underlying anti-fouling coating; or

(B) Remove any TBT or other organotin compound from the vessel hull.

(4) When an organotin compound other than TBT is used as a catalyst in the anti-fouling coating (*e.g.,* dibutyltin), the anti-fouling coating must:

(i) Contain less than 2,500 mg total tin per kilogram of dry paint; and

(ii) Not be designed to slough or otherwise peel from the vessel hull, noting that incidental amounts of anti-fouling coating discharged by abrasion during cleaning or after contact with other hard surfaces (*e.g.,* moorings) are acceptable.

(5) Anti-fouling coatings must not contain cybutryne.

(i) Any vessel that has previously applied an anti-fouling coating that contains cybutryne in the external coating layer of their hulls or external parts or surfaces must:

(A) Apply and maintain an effective overcoat that forms a barrier so that no cybutryne leaches from the underlying anti-fouling coating, noting that incidental amounts of anti-fouling coating discharged by abrasion during cleaning or after contact with other hard surfaces (*e.g.,* moorings) are acceptable; or

(B) Remove any cybutryne coating.

(6) As appropriate based on vessel class and operations, alternatives to copper-based anti-fouling coatings (*e.g.,* non-biocidal anti-fouling coatings) or coating with lower biocidal release rates must be considered for vessels spending 30 or more days per year in a copper-impaired waterbody or using these waters as their home port.

(d) *Cleaning.* (1) Cleanings should take place in drydock when practicable.

(2) Hulls and niche areas must be managed to minimize biofouling such as through preventative cleaning of microfouling.

(3) Hull and niche area cleanings must minimize damage to the anti-fouling coating, minimize release of biocides, and follow applicable cleaning requirements found on the coating manufacturers' instructions and any applicable FIFRA label.

(4) Any discharge from in-water cleaning without capture of macrofouling is prohibited.

(5) Any discharge from in-water cleaning without capture of any copper-based hull coating in a copper-impaired water body within the first 365 days after application of that coating is prohibited.

(6) In-water cleaning must not be conducted on any section of an anti-fouling coating that shows excessive cleaning actions (*e.g.,* brush marks) or blistering due to the internal failure of the paint system.

(7) Any soap, cleaner, or detergent used on vessel surfaces, including but not limited to a scum line of the hull, must be minimally toxic, phosphate-free, and biodegradable.

(8) Additional standards applicable to discharges from hulls and associated niche areas when a vessel is operating in federally-protected waters are contained in § 139.40(i).

§ 139.23 Inert gas systems.

There are no additional discharge-specific requirements that apply to the discharge of washwater from an inert gas system and deck seal water when used as an integral part of that system.

§ 139.24 Motor gasoline and compensating systems.

(a) The requirements in paragraph (b) of this section apply to the discharge of motor gasoline and compensating ambient water added to keep gasoline tanks full to prevent potentially explosive gasoline vapors from forming.

(b) Additional standards applicable to discharges from motor gasoline and compensating systems when a vessel is operating in federally-protected waters are contained in § 139.40(j).

§ 139.25 Non-oily machinery.

(a) The requirements in paragraph (b) of this section apply to discharges from machinery that contains no oil, including but not limited to discharges from the operation of desalination systems, water chillers, valve packings, water piping, low- and high-pressure air compressors, propulsion engine jacket coolers, fire pumps, and seawater and potable water pumps.

(b) The discharge of untreated non-oily machinery wastewater and packing gland or stuffing box effluent containing toxic or bioaccumulative additives, or the discharge of oil in such quantities as may be harmful, is prohibited.

§ 139.26 Pools and spas.

(a) The requirements in paragraphs (b) and (c) of this section apply to discharges from pools and spas.

(b) Except for unintentional or inadvertent releases from overflows across the decks and into overboard drains caused by, but not limited to, weather, vessel traffic, marine wildlife avoidance or navigational maneuvering, discharge of pool and spa water must:

(1) Occur only while the vessel is underway, unless determined to be infeasible; and

(2) Meet the following numeric discharge standard:

(i) For chlorine disinfection: total residual chlorine less than 100 µg/L; and

(ii) For bromine disinfection: total residual oxidant less than 25 µg/L.

(c) Additional standards applicable to discharges from pools and spas when a vessel is operating in federally-protected waters are contained in § 139.40(k).

§ 139.27 Refrigeration and air conditioning.

(a) The requirements in paragraph (b) of this section apply to discharges of condensation from refrigeration, air conditioning, and similar chilling equipment.

(b) The direct overboard discharge of any condensate that contacts toxic or hazardous materials is prohibited.

§ 139.28 Seawater piping.

(a) The requirements in paragraphs (b) through (d) of this section apply to discharges from seawater piping systems, including while a vessel is in port or in layup.

(b) Seawater piping systems must be inspected, maintained, and cleaned as necessary to minimize the accumulation and discharge of biofouling organisms.

(c) Seawater piping systems that accumulate macrofouling must be fitted with a Marine Growth Prevention System (MGPS).

(1) An MGPS must be selected to address:

(i) The level, frequency, and type of expected biofouling; and

(ii) The design, location, and area in which the system will be used.

(2) An MGPS must include one, or some combination of the following:

(i) Chemical injection;

(ii) Electrolysis, ultrasound, ultraviolet radiation, or electrochlorination;

(iii) Application of an antifouling coating;

(iv) Use of cupro-nickel piping; or

(v) Use of glass-reinforced/filament-wound epoxy-based composite piping.

(3) Upon identification of macrofouling in a seawater piping system, reactive measures to manage the macrofouling must be used. Discharges resulting from reactive measures to remove macrofouling are prohibited in port.

(d) Additional standards applicable to discharges from seawater piping systems when a vessel is operating in federally-protected waters are contained in § 139.40(l).

§ 139.29 Sonar domes.

(a) The requirements in paragraphs (b) and (c) of this section apply to discharges from sonar domes.

(b) The discharge of water from inside the sonar dome is prohibited during maintenance or repair.

(c) Any discharge from the use of bioaccumulative biocides on the exterior of the sonar dome is prohibited when non-bioaccumulative alternatives are available.

Subpart D—Special Area Requirements

§ 139.40 Federally-protected waters.

(a) *Applicability.* The requirements in paragraphs (b) through (l) of this section are in addition to applicable standards in subparts B and C of this part and apply when a vessel is operating in federally-protected waters.

(b) *Ballast tanks.* The discharge or uptake of ballast water in federally-protected waters must be avoided except for vessels:

(1) Operating within the boundaries of any national marine sanctuary that preserves shipwrecks or maritime heritage in the Great Lakes, unless the designation documents for such sanctuary do not allow taking up or discharging ballast water in such sanctuary, pursuant to 16 U.S.C. 1431 note (Pub. L. 113–281, title VI, § 610, Dec. 18, 2014, 128 Stat. 3064, as amended by Pub. L. 114–120, title VI, § 602(1), Feb. 8, 2016, 130 Stat. 79); or

(2) That operate solely within federally-protected waters and take on and discharge ballast water exclusively in the contiguous portions of a single COTP Zone.

(c) *Bilges.* For any vessel of 400 GT and above, the discharge of bilgewater into federally-protected waters is prohibited.

(d) *Boilers.* The discharge of boiler blowdown into federally-protected waters is prohibited.

(e) *Chain lockers.* The discharge of accumulated water and sediment from any chain locker into federally-protected waters is prohibited.

(f) *Decks.* The discharge of deck washdown into federally-protected waters is prohibited except for those vessels operating exclusively within these protected waters provided the discharge is in compliance with all other requirements in § 139.15.

(g) *Fire protection equipment.* The discharge from fire protection equipment into federally-protected water is prohibited except to comply with USCG fire drill requirements or anchor and anchor chain requirements in § 139.14. When USCG fire drills are conducted, the discharge of any firefighting foam into federally-protected waters is prohibited except by any vessel owned or under contract with the United States, State, or local government to do business exclusively in any federally-protected waters.

(h) *Graywater systems.* The discharge of graywater into federally-protected waters from any vessel with remaining available graywater storage capacity is prohibited.

(i) *Hulls and associated niche areas.* The discharge from in-water cleaning of vessel hulls and niche areas into federally-protected waters is prohibited except by any vessel owned or under contract with the United States, State, or local government to do business exclusively in any federally-protected waters.

(j) *Motor gasoline and compensating systems.* The discharge of motor gasoline and compensating discharges into federally-protected waters is prohibited.

(k) *Pools and spas.* The discharge of pool or spa water into federally-protected waters is prohibited.

(l) *Seawater piping systems.* The discharge of chemical dosing, as described in § 139.28, into federally-protected waters is prohibited.

Subpart E—Procedures for States to Request Changes to Standards, Regulations, or Policy Promulgated by the Administrator

§ 139.50 Petition by a Governor for the Administrator to establish an emergency order or review a standard, regulation, or policy.

(a) The Governor of a State (or a designee) may submit a petition to the Administrator:

(1) To issue an emergency order under CWA section 312(p)(4)(E); or

(2) To review any standard of performance, regulation, or policy promulgated by the Administrator under CWA section 312(p)(4) or (6), if there exists new information that could reasonably result in a change to:

(i) The standard of performance, regulation, or policy; or

(ii) A determination on which the standard of performance, regulation, or policy was based.

(b) A petition under paragraph (a) of this section shall be signed by the Governor (or a designee) and must include:

(1) The purpose of the petition (request for emergency order or a review of a standard, regulation, or policy);

(2) Any applicable scientific or technical information that forms the basis of the petition;

(3) The direct and indirect benefits if the requested petition were to be granted by the Administrator; and

(4) For a petition under paragraph (a)(2) of this section, the costs to the affected classes, types, and/or sizes of vessels if the requested petition were to be granted by the Administrator.

(c) The Administrator shall grant or deny:

(1) A petition under paragraph (a)(1) of this section by not later than the date that is 180 days after the date on which the petition is submitted; and

(2) A petition under paragraph (a)(2) of this section by not later than the date that is one year after the date on which the petition is submitted.

(d) If the Administrator determines to grant a petition:

(1) In the case of a petition under paragraph (a)(1) of this section, the Administrator shall immediately issue the relevant emergency order under CWA section 312(p)(4)(E); or

(2) In the case of a petition under paragraph (a)(2) of this section, the Administrator shall sign a Notice of Proposed Rulemaking for publication in the **Federal Register** to revise the relevant standard, requirement, regulation, or policy under CWA section 312(p)(4) or (6), as applicable, as soon as possible and not later than 30 days after the date of the determination.

(e) If the Administrator determines to deny a petition, the Administrator shall sign a notice of the determination for publication in the **Federal Register** that includes a detailed explanation of the scientific, technical, or operational factors that form the basis of the determination, as soon as possible and not later than 30 days after the date of the determination.

§ 139.51 Petition by a Governor for the Administrator to establish enhanced Great Lakes system requirements.

(a) The Governors endorsing a proposed standard or requirement under CWA section 312(p)(10)(B)(ii)(III)(bb) may jointly submit to the Administrator and the Secretary for approval each proposed standard of performance or other requirement developed and endorsed pursuant to CWA section 312(p)(10)(B)(ii) with respect to any discharge that is subject to regulation under this part and occurs within the Great Lakes System.

(b) A petition under paragraph (a) of this section must include:

(1) An explanation regarding why the applicable standard of performance or other requirement is at least as stringent as a comparable standard of performance or other requirement under this part;

(2) An explanation regarding why the standard of performance or other requirement is in accordance with maritime safety; and

(3) An explanation regarding why the standard of performance or other

requirement is in accordance with applicable maritime and navigation laws and regulations.

(c) On receipt of a proposed standard of performance or other requirement under paragraph (b) of this section, the Administrator and the Secretary shall sign and transmit to the Office of Federal Register for publication a joint notice that, at minimum:

(1) States that the proposed standard or requirement is publicly available; and

(2) Provides an opportunity for public comment regarding the proposed standard or requirement during the 90-day period beginning on the date of receipt by the Administrator of the proposed standard or requirement.

(d) The Administrator shall commence a review of each proposed standard of performance or other requirement covered by the notice to determine whether that standard or requirement is at least as stringent as comparable standards and requirements under this part.

(e) In carrying out paragraph (d) of this section, the Administrator:

(1) Shall consult with the Secretary,

(2) Shall consult with the Governor of each Great Lakes State and representatives from the Federal and provincial governments of Canada;

(3) Shall take into consideration any relevant data or public comments received under paragraph (c)(2) of this section; and

(4) Shall not take into consideration any preliminary assessment by the Great Lakes Commission or any dissenting opinion by a Governor of a Great Lakes State, except to the extent that such an assessment or opinion is relevant to the criteria for the applicable determination under paragraph (d) of this section.

(f) If a Governor of a Great Lakes State withdraws the endorsement by not later than 90 days after the Administrator receives the proposed standard or requirement, and the withdrawal results in the proposed standard or requirement not having the applicable number of endorsements, the Administrator shall terminate review.

(g) Upon review and determination, the Administrator and the Secretary shall approve each proposed standard or other requirement, unless the Administrator determines that the proposed standard or other requirement is not at least as stringent as comparable standards and requirements under this part or the Secretary determines that the proposed standard or requirement is not in accordance with maritime safety or is not in accordance with applicable maritime and navigation laws and regulations.

(h) If the Administrator and the Secretary approve a proposed standard or other requirement, the Administrator and the Secretary shall sign a notice of the determination and transmit the notice to the Governor of each Great Lakes State and to the Office of Federal Register for publication.

(i) If the Administrator and the Secretary disapprove a proposed standard or other requirement, the Administrator and the Secretary shall sign a notice of the determination and transmit it to the Governor of each Great Lakes State and to the Office of Federal Register for publication. The notice must include:

(1) A description of the reasons why the standard or requirement is, as applicable, less stringent than a comparable standard or requirement under this part, and

(2) Any recommendations regarding changes the Governors of the Great Lakes states could make to conform the disapproved portion of the standard or requirement to the requirements of this section.

(j) The Administrator and the Secretary shall make an approval or disapproval determination under this section and transmit a notice of such determination to the Governor of each Great Lakes State and the Office of Federal Register not later than 180 days after the date of receipt of the proposed standard or regulation.

(k) On approval by the Administrator and the Secretary of a proposed standard of performance or other requirement, the Administrator shall establish, by regulation, the proposed standard or requirement within the Great Lakes System in lieu of any comparable standard or other requirement promulgated under CWA section 312(p)(4). A requirement to prohibit one or more types of discharge, whether treated or not treated, into waters within the Great Lakes System shall not apply outside the waters of the Great Lakes states of the Governors endorsing the requirement.

§ 139.52 Application by a State for the Administrator to establish a State no-discharge zone.

(a) If any State determines that the protection and enhancement of the quality of some or all of the waters within the State require greater environmental protection, the Governor of a State (or a designee) may submit an application to the Administrator to establish a regulation prohibiting one or more discharges, whether treated or not treated, into such waters subject to the application.

(b) A prohibition by the Administrator under paragraph (a) of this section shall not apply until the Administrator, in concurrence with the Secretary, reviews the State application and makes the applicable determinations described in paragraph (d) of this section and publishes a regulation establishing the prohibition.

(c) An application submitted by the State under paragraph (a) of this section shall be signed by the Governor (or a designee) and must include:

(1) A narrative explanation of the location of the proposed waters and a map delineating the boundaries of the requested prohibition using geographic coordinates;

(2) A certification that a prohibition of the discharge(s) would protect and enhance the quality of the specific waters within the State to a greater extent than the applicable Federal standard provides;

(3) A detailed analysis of the direct and indirect benefits of the requested prohibition for each individual discharge for which the State is seeking a prohibition;

(4) A table identifying the types and number of vessels operating in the waterbody and a table identifying the types and number of vessels that would be subject to the prohibition;

(5) A table identifying the location, operating schedule, draft requirements, pumpout capacity, pumpout flow rate, connections, and fee structure of each existing facility capable of servicing the vessels that would be subject to the prohibition and available to receive the prohibited discharge;

(6) A description of the wastewater handling procedures of each facility identified in paragraph (c)(5) of this section, including information on how wastewater is stored, transported, treated, and/or disposed by each facility;

(7) A map indicating the location of each stationary facility, and the coverage area of each mobile facility, identified in paragraph (c)(5) of this section within the proposed waters;

(8) A detailed analysis of the impacts to vessels subject to the prohibition, including a discussion of how these vessels may feasibly collect and store the discharge, the extent to which retrofitting may be required, costs that are incurred as a result of the discharge prohibition, and any safety implications.

(d) On application of a State, the Administrator, in concurrence with the Secretary, shall, by regulation, prohibit the discharge from a vessel of one or more discharges subject to regulation under this part, whether treated or not

treated, into the waters covered by the application if the Administrator determines that:

(1) The prohibition of the discharge(s) would protect and enhance the quality of the specified waters within the State;

(2) Adequate facilities for the safe and sanitary removal and treatment of the prohibited discharge(s) are reasonably available, including taking costs into consideration, for the water and all vessels to which the prohibition would apply. A determination of adequacy shall consider, at a minimum, water depth, dock size, pumpout facility capacity and flow rate, availability of year-round operations, proximity to navigation routes, the availability of operational changes as a means to reduce the discharge, and the ratio of pumpout facilities to the population and discharge capacity of vessels operating in those waters;

(3) The discharge(s) can be safely collected and stored until a vessel reaches an appropriate facility or location for discharge;

(4) In the case of an application for the prohibition of the discharge of ballast water in port (or in any other location where cargo, passengers, or fuel are loaded and unloaded):

(i) The considerations for adequate facilities described in paragraph (d)(2) of this section apply; and

(ii) The prohibition will not unreasonably interfere with the safe loading and unloading of cargo, passengers, or fuel.

(e) The Administrator shall submit to the Secretary a request for written concurrence on a determination made to establish a prohibition.

(1) A failure by the Secretary to concur with the Administrator 60 days after the date on which the Administrator submits a request for concurrence shall not prevent the Administrator from prohibiting the discharge or discharges, subject to the condition that the Administrator shall include in the administrative record of the promulgation:

(i) Documentation of the request for concurrence; and

(ii) The response of the Administrator to any written objections received from the Secretary relating to the prohibition during the 60-day period beginning on the date of the request for concurrence.

(f) If the Administrator determines that an application meets the criteria in paragraph (c) of this section and approves the application, the Administrator shall notify the State of the tentative approval and develop a Notice of Proposed Rulemaking for transmittal to the Office of the Federal Register.

Appendix A to Part 139—Federally-Protected Waters [1]

The asterisk (''*'') modifier in appendix A to part 139 identifies those areas vessels subject to these Federal standards may be most likely to transit based on proximity to waters where these vessels may operate.

A.1 National Marine Sanctuaries

American Samoa National Marine Sanctuary *
Channel Islands National Marine Sanctuary *
Cordell Bank National Marine Sanctuary *
Florida Keys National Marine Sanctuary *
Greater Farallones National Marine Sanctuary *
Hawaiian Islands Humpback Whale National Marine Sanctuary *
Monterey Bay National Marine Sanctuary *
Olympic Coast National Marine Sanctuary *
Stellwagen Bank National Marine Sanctuary *

A.2 Marine National Monuments

Mariana Trench Marine National Monument *
Northeast Canyons and Seamounts Marine National Monument *
Pacific Remote Islands Marine National Monument *
Papahānaumokuākea Marine National Monument *
Rose Atoll Marine National Monument

A.3 National Parks (National Reserves and Monuments)

Alabama

Birmingham Civil Rights National Monument
Freedom Riders National Monument
Horseshoe Bend National Military Park
Little River Canyon National Preserve
Muscle Shoals National Heritage Area
Natchez Trace National Scenic Trail *
Russell Cave National Monument
Selma to Montgomery National Historic Trail
Trail of Tears National Historic Trail
Tuskegee Airmen National Historic Site
Tuskegee Institute National Historic Site

Alaska

Aleutian World War II National Historic Area
Aniakchak National Monument and Preserve *
Bering Land Bridge National Preserve *
Cape Krusenstern National Monument *
Chilkoot National Historic Trail
Denali National Park and Preserve
Gates of the Arctic National Park and Preserve *
Glacier Bay National Park and Preserve *
Iditarod National Historic Trail
Inupiat Heritage Center
Katmai National Park and Preserve *
Kenai Fjords National Park *
Kenai Mountains-Turnagain Arm National Heritage Area
Klondike Gold Rush National Historical Park *
Kobuk Valley National Park *
Lake Clark National Park and Preserve *
Noatak National Preserve *
Sitka National Historical Park *
Wrangell–St. Elias National Park and Preserve *
Yukon–Charley Rivers National Preserve *

American Samoa

National Park of American Samoa *

Arizona

Arizona National Scenic Trail
Butterfield Overland National Historic Trail
Canyon de Chelly National Monument
Casa Grande Ruins National Monument
Chiricahua National Monument
Coronado National Memorial
Fort Bowie National Historic Site
Glen Canyon National Recreation Area
Grand Canyon–Parashant National Monument
Grand Canyon National Park
Hohokam Pima National Monument
Hubbell Trading Post National Historic Site
Lake Mead National Recreation Area
Montezuma Castle National Monument
Navajo National Monument
Old Spanish National Historic Trail
Organ Pipe Cactus National Monument
Petrified Forest National Park
Pipe Spring National Monument
Saguaro National Park
Santa Cruz Valley National Heritage Area
Sunset Crater Volcano National Monument
Tonto National Monument
Tumacacori National Historical Park
Tuzigoot National Monument
Walnut Canyon National Monument
Wupatki National Monument
Yuma Crossing National Heritage Area

Arkansas

Arkansas Post National Memorial *
Buffalo National River *
Butterfield Overland National Historic Trail
Charleston National Commemorative Site
Fort Smith National Historic Site *
Hot Springs National Park
Little Rock Central High School National Historic Site
Mississippi Delta National Heritage Area
Pea Ridge National Military Park
President William Jefferson Clinton Birthplace Home National Historic Site
Trail of Tears National Historic Trail

California

Butterfield Overland National Historic Trail
Cabrillo National Monument *
California National Historic Trail
Castle Mountains National Monument
Cesar E. Chavez National Monument
Channel Islands National Park *
Death Valley National Park
Devils Postpile National Monument
Eugene O'Neill National Historic Site
Fort Point National Historic Site *
Golden Gate National Recreation Area *
John Muir National Historic Site
Joshua Tree National Park
Juan Bautista de Anza National Historic Trail
Kings Canyon National Park
Lassen Volcanic National Park
Lava Beds National Monument
Manzanar National Historic Site
Mojave National Preserve
Muir Woods National Monument
Old Spanish National Historic Trail
Pacific Crest National Scenic Trail
Pinnacles National Park

Point Reyes National Seashore *
Pony Express National Historic Trail
Port Chicago Naval Magazine National Memorial *
Redwood National Park *
Roosevelt Campobello International Park
Rosie the Riveter/World War II Home Front National Historical Park *
Sacramento-San Joaquin Delta National Heritage Area
San Francisco Maritime National Historical Park *
Santa Monica Mountains National Recreation Area *
Sequoia National Park
Tule Lake National Monument
Whiskeytown-Shasta-Trinity National Recreation Area
Yosemite National Park

Colorado

Amache National Historic Site
Bent's Old Fort National Historic Site
Black Canyon of the Gunnison National Park
Cache La Poudre River National Heritage Area
California National Historic Trail
Colorado National Monument
Continental Divide National Scenic Trail
Curecanti National Recreation Area
Dinosaur National Monument
Florissant Fossil Beds National Monument
Great Sand Dunes National Park and Preserve
Hovenweep National Monument
Mesa Verde National Park
Old Spanish National Historic Trail
Pony Express National Historic Trail
Rocky Mountain National Park
Sand Creek Massacre National Historic Site
Sangre de Cristo National Heritage Area
Santa Fe National Historic Trail
South Park National Heritage Area
Yucca House National Monument

Connecticut

Appalachian National Scenic Trail *
Coltsville National Historical Park
New England National Scenic Trail
The Last Green Valley National Heritage Corridor
Upper Housantonic Valley National Heritage Area
Washington-Rochambeau Revolutionary Route National Historic Trail
Weir Farm National Historical Park

Delaware

Captain John Smith Chesapeake National Historic Trail
First State National Historical Park *
Washington-Rochambeau Revolutionary Route National Historic Trail

District of Columbia

Adams Memorial
Belmont-Paul Women's Equality National Monument
Captain John Smith Chesapeake National Historic Trail
Carter G. Woodson Home National Historic Site
Chesapeake and Ohio Canal National Historical Park *
Constitution Gardens
Desert Storm/Desert Shield Memorial
Dwight D. Eisenhower Memorial
Ford's Theatre National Historic Site
Franklin Delano Roosevelt Memorial *
Frederick Douglass National Historic Site
George Washington Memorial Parkway
Global War on Terrorism Memorial
Korean War Veterans Memorial *
Lincoln Memorial *
Lyndon Baines Johnson Memorial Grove on the Potomac *
Martin Luther King Jr. Memorial *
Mary McLeod Bethune Council House National Historic Site
National Capital Parks—East *
National Mall and Memorial Parks
Pennsylvania Avenue National Historic Site
Potomac Heritage National Scenic Trail
Rock Creek Park
Star-Spangled Banner National Historic Trail
The White House and President's Park
Theodore Roosevelt Island *
Thomas Jefferson Memorial *
Vietnam Veterans Memorial
Washington-Rochambeau Revolutionary Route National Historic Trail
Washington Monument *
World War I Memorial
World War II Memorial *

Florida

Big Cypress National Preserve *
Biscayne National Park *
Canaveral National Seashore *
Castillo de San Marcos National Monument *
De Soto National Memorial *
Dry Tortugas National Park *
Everglades National Park *
Florida National Scenic Trail
Fort Caroline National Memorial *
Fort Matanzas National Monument *
Gulf Islands National Seashore *
Gullah/Geechee Cultural Heritage Corridor
Timucuan Ecological and Historic Preserve *

Georgia

Andersonville National Historic Site
Appalachian National Scenic Trail
Arabia Mountain National Heritage Area
Augusta Canal National Heritage Area
Chattahoochee River National Recreation Area
Chickamauga and Chattanooga National Military Park *
Cumberland Island National Seashore *
Fort Frederica National Monument *
Fort Pulaski National Monument *
Gullah/Geechee Cultural Heritage Corridor
Jimmy Carter National Historical Park
Kennesaw Mountain National Battlefield Park
Kettle Creek Battlefield
Martin Luther King Jr. National Historical Park
Ocmulgee Mounds National Historical Park *
Trail of Tears National Historic Trail

Guam

War in the Pacific National Historical Park *

Hawaii

Ala Kahakai National Historic Trail
Haleakalā National Park *
Hawai'i Volcanoes National Park *
Honouliuli National Historic Site
Kalaupapa National Historical Park *
Kaloko-Honōkhau National Historical Park *
Pearl Harbor National Memorial *
Pu'uhonua o Hōnaunau National Historical Park *
Pu'ukoholā Heiau National Historic Site *

Idaho

California National Historic Trail
City of Rocks National Reserve
Continental Divide National Scenic Trail
Craters of the Moon National Monument and Preserve
Hagerman Fossil Beds National Monument
Lewis and Clark National Historic Trail
Minidoka National Historic Site *
Nez Perce (Nee-Me-Poo) National Historic Trail
Nez Perce National Historical Park
Oregon National Historic Trail
Pacific Northwest National Scenic Trail
Yellowstone National Park

Illinois

Abraham Lincoln National Heritage Area
Chicago Portage National Historic Site
Emmett Till and Mamie Till-Mobley National Monument
Gateway Arch National Park *
Illinois and Michigan Canal National Heritage Corridor
Lewis and Clark National Historic Trail *
Lincoln Home National Historic Site
Mormon Pioneer National Historic Trail
New Philadelphia National Historic Site
Pullman National Historical Park
Ronald Reagan Boyhood Home National Historic Site
Trail of Tears National Historic Trail

Indiana

George Rogers Clark National Historical Park
Indiana Dunes National Park *
Kennedy-King National Commemorative Site
Lewis and Clark National Historic Trail
Lincoln Boyhood National Memorial

Iowa

America's Agricultural Heritage Partnership (Silos and Smokestacks National Heritage Area)
Effigy Mounds National Monument *
Herbert Hoover National Historic Site
Lewis and Clark National Historic Trail
Mormon Pioneer National Historic Trail

Kansas

Brown v. Board of Education National Historical Park
California National Historic Trail
Fort Larned National Historic Site
Fort Scott National Historic Site
Freedom's Frontier National Heritage Area
Lewis and Clark National Historic Trail
Nicodemus National Historic Site
Oregon National Historic Trail
Pony Express National Historic Trail
Quindaro Townsite
Santa Fe National Historic Trail
Tallgrass Prairie National Preserve

Kentucky

Abraham Lincoln Birthplace National Historical Park
Big South Fork National River and Recreation Area
Camp Nelson National Monument *
Cumberland Gap National Historical Park
Fort Donelson National Battlefield *
Lewis and Clark National Historic Trail
Mammoth Cave National Park *
Mill Springs Battlefield National Monument *

Trail of Tears National Historic Trail

Louisiana

Atchafalaya National Heritage Area
Cane River Creole National Historical Park
Cane River National Heritage Area
El Camino Real de los Tejas National Historic Trail
Jean Lafitte National Historical Park and Preserve *
Mississippi Delta National Heritage Area
New Orleans Jazz National Historical Park
Poverty Point National Monument
Vicksburg National Military Park *

Maine

Acadia National Park *
Appalachian National Scenic Trail
Katahdin Woods and Waters National Monument
Saint Croix Island International Historic Site

Maryland

Antietam National Battlefield
Appalachian Forest National Heritage Area
Appalachian National Scenic Trail
Assateague Island National Seashore *
Baltimore National Heritage Area
Captain John Smith Chesapeake National Historic Trail
Catoctin Mountain Park
Chesapeake and Ohio Canal National Historical Park
Clara Barton National Historic Site
Fort McHenry National Monument and Historic Shrine *
Fort Washington Park *
George Washington Memorial Parkway *
Greenbelt Park
Hampton National Historic Site
Harpers Ferry National Historical Park
Harriet Tubman Underground Railroad National Historical Park
Journey Through Hallowed Ground National Heritage Area
Monocacy National Battlefield
National Capital Parks—East *
Piscataway Park *
Potomac Heritage National Scenic Trail
Star-Spangled Banner National Historic Trail
Thomas Stone National Historic Site
Washington-Rochambeau Revolutionary Route National Historic Trail

Massachusetts

Adams National Historical Park
Appalachian National Scenic Trail
Boston African American National Historic Site *
Boston Harbor Islands National Recreation Area *
Boston National Historical Park *
Cape Cod National Seashore *
Essex National Heritage Area
Frederick Law Olmsted National Historic Site
Freedom's Way National Heritage Area
John Fitzgerald Kennedy National Historic Site
John H. Chafee Blackstone River Valley National Heritage Corridor
Longfellow—Washington's Headquarters National Historic Site
Lowell National Historical Park
Minute Man National Historical Park
New Bedford Whaling National Historical Park *
New England National Scenic Trail
Salem Maritime National Historic Site *
Saugus Iron Works National Historic Site *
Springfield Armory National Historic Site
The Last Green Valley National Heritage Corridor
Upper Housantonic Valley National Heritage Area
Washington-Rochambeau Revolutionary Route National Historic Trail

Michigan

Father Marquette National Memorial
Isle Royale National Park *
Keweenaw National Historical Park *
MotorCities National Heritage Area
North Country National Scenic Trail
Pictured Rocks National Lakeshore *
River Raisin National Battlefield Park *
Sleeping Bear Dunes National Lakeshore *

Minnesota

Grand Portage National Monument *
Mississippi National River and Recreation Areas *
North Country National Scenic Trail
Pipestone National Monument
Saint Croix National Scenic Riverway
Voyageurs National Park *

Mississippi

Brices Cross Roads National Battlefield Site
Emmett Till and Mamie Till-Mobley National Monument
Gulf Islands National Seashore
Medgar and Myrlie Evers Home National Monument
Mississippi Delta National Heritage Area
Mississippi Gulf Coast National Heritage Area
Mississippi Hills National Heritage Area
Natchez National Historical Park *
Natchez Trace National Scenic Trail
Natchez Trace Parkway
Tupelo National Battlefield
Vicksburg National Military Park

Missouri

Butterfield Overland National Historic Trail
California National Historic Trail
Freedom's Frontier National Heritage Area
Gateway Arch National Park
George Washington Carver National Monument
Harry S Truman National Historic Site
Lewis and Clark National Historic Trail
Oregon National Historic Trail
Ozark National Scenic Riverways
Pony Express National Historic Trail
Santa Fe National Historic Trail
Ste. Genevieve National Historical Park
Trail of Tears National Historic Trail
Ulysses S. Grant National Historic Site
Wilson's Creek National Battlefield

Montana

Big Hole National Battlefield
Bighorn Canyon National Recreation Area
Continental Divide National Scenic Trail
Fort Union Trading Post National Historic Site
Glacier National Park
Grant-Kohrs Ranch National Historic Site
Lewis and Clark National Historic Trail
Little Bighorn Battlefield National Monument
Nez Perce (Nee-Me-Poo) National Historic Trail
Nez Perce National Historical Park
Pacific Northwest National Scenic Trail
Yellowstone National Park

Nebraska

Agate Fossil Beds National Monument
California National Historic Trail
Chimney Rock National Historic Site
Homestead National Historical Park
Lewis and Clark National Historic Trail
Missouri National Recreational River *
Mormon Pioneer National Historic Trail
Niobrara National Scenic River
Oregon National Historic Trail
Pony Express National Historic Trail
Scotts Bluff National Monument

Nevada

California National Historic Trail
Death Valley National Park
Great Basin National Heritage Route
Great Basin National Park
Lake Mead National Recreation Area
Old Spanish National Historic Trail
Pony Express National Historic Trail
Tule Springs Fossil Beds National Monument

New Hampshire

Appalachian National Scenic Trail
Freedom's Way National Heritage Area
Saint-Gaudens National Historical Park

New Jersey

Appalachian National Scenic Trail
Crossroads of the American Revolution National Heritage Area
Delaware Water Gap National Recreation Area
Gateway National Recreation Area *
Great Egg Harbor National Scenic and Recreational River
Middle Delaware National Scenic River
Morristown National Historical Park
Paterson Great Falls National Historical Park
Pinelands National Reserve
Statue of Liberty National Monument *
Thomas Edison National Historical Park
Washington-Rochambeau Revolutionary Route National Historic Trail

New Mexico

Aztec Ruins National Monument
Bandelier National Monument
Butterfield Overland National Historic Trail
Capulin Volcano National Monument
Carlsbad Caverns National Park
Chaco Culture National Historical Park
Continental Divide National Scenic Trail
El Camino de Tierra Adentro National Historic Trail
El Malpais National Monument
El Morro National Monument
Fort Union National Monument
Gila Cliff Dwellings National Monument
Manhattan Project National Historical Park
Northern Rio Grande National Heritage Area
Old Spanish National Historic Trail
Pecos National Historical Park
Petroglyph National Monument
Salinas Pueblo Missions National Monument
Santa Fe National Historic Trail
Valles Caldera National Preserve
White Sands National Park

New York

African Burial Ground National Monument
Appalachian National Scenic Trail
Captain John Smith Chesapeake National Historic Trail

Castle Clinton National Monument *
Champlain Valley National Heritage Partnership
Eleanor Roosevelt National Historic Site
Erie Canalway National Heritage Corridor
Federal Hall National Memorial
Fire Island National Seashore *
Fort Stanwix National Monument
Gateway National Recreation Area *
General Grant National Memorial
Governors Island National Monument *
Hamilton Grange National Memorial
Harriet Tubman National Historical Park
Home of Franklin D. Roosevelt National Historic Site *
Kate Mullany National Historic Site
Lower East Side Tenement National Historic Site
Martin Van Buren National Historic Site
Maurice D. Hinchey Hudson River National Heritage Area
Middle Delaware National Scenic River
Niagara Falls National Heritage Area
North Country National Scenic Trail
Sagamore Hill National Historic Site *
Saint Paul's Church National Historic Site
Saratoga National Historical Park *
Statue of Liberty National Monument *
Stonewall National Monument
Theodore Roosevelt Birthplace National Historic Site
Theodore Roosevelt Inaugural National Historic Site
Thomas Cole National Historic Site
Upper Delaware Scenic and Recreational River
Vanderbilt Mansion National Historic Site *
Washington-Rochambeau Revolutionary Route National Historic Trail
Women's Rights National Historical Park *

North Carolina

Appalachian National Scenic Trail
Blue Ridge National Heritage Area
Blue Ridge Parkway
Cape Hatteras National Seashore *
Cape Lookout National Seashore *
Carl Sandburg Home National Historic Site
Fort Raleigh National Historic Site *
Great Smoky Mountains National Park
Guilford Courthouse National Military Park
Gullah/Geechee Cultural Heritage Corridor
Moores Creek National Battlefield
Overmountain Victory National Historic Trail
Trail of Tears National Historic Trail
Wright Brothers National Memorial

North Dakota

Fort Union Trading Post National Historic Site
International Peace Garden
Knife River Indian Villages National Historic Site
Lewis and Clark National Historic Trail
North Country National Scenic Trail
Northern Plains National Heritage Area
Theodore Roosevelt National Park

Northern Mariana Islands

American Memorial Park *

Ohio

Charles Young Buffalo Soldiers National Monument
Cuyahoga Valley National Park
Dayton Aviation Heritage National Historical Park
Fallen Timbers Battlefield and Fort Miamis National Historic Site
First Ladies National Historic Site
Hopewell Culture National Historical Park
James A. Garfield National Historic Site
Lewis and Clark National Historic Trail
National Aviation National Heritage Area
North Country National Scenic Trail
Ohio and Erie National Heritage Canalway
Perry's Victory and International Peace Memorial *
William Howard Taft National Historic Site

Oklahoma

Butterfield Overland National Historic Trail
Chickasaw National Recreation Area
Fort Smith National Historic Site
Oklahoma City National Memorial
Santa Fe National Historic Trail
Trail of Tears National Historic Trail
Washita Battlefield National Historic Site

Oregon

California National Historic Trail
Crater Lake National Park
John Day Fossil Beds National Monument
Lewis and Clark National Historic Trail
Lewis and Clark National Historical Park *
Nez Perce (Nee-Me-Poo) National Historic Trail
Nez Perce National Historical Park
Oregon Caves National Monument and Preserve
Oregon National Historic Trail
Pacific Crest National Scenic Trail

Pennsylvania

Allegheny Portage Railroad National Historic Site
Appalachian National Scenic Trail
Benjamin Franklin National Memorial
Captain John Smith Chesapeake National Historic Trail
Delaware and Lehigh National Heritage Corridor
Delaware Water Gap National Recreation Area
Edgar Allan Poe National Historic Site
Eisenhower National Historic Site
Flight 93 National Memorial
Fort Necessity National Battlefield
Friendship Hill National Historic Site *
Gettysburg National Military Park
Gloria Dei (Old Swedes') Church National Historic Site
Hopewell Furnace National Historic Site
Independence National Historical Park *
Johnstown Flood National Memorial
Journey Through Hallowed Ground National Heritage Area
Lackawanna Valley National Heritage Area
Lewis and Clark National Historic Trail
Middle Delaware National Scenic River
North Country National Scenic Trail
Oil Region National Heritage Area
Potomac Heritage National Scenic Trail
Rivers of Steel National Heritage Area
Schuylkill River Valley National Heritage Area
Southwestern Pennsylvania Industrial Heritage Route (Paths of Progress National Heritage Route)
Steamtown National Historic Site
Susquehanna National Heritage Area
Thaddeus Kosciuszko National Memorial
Upper Delaware Scenic and Recreational River
Valley Forge National Historical Park
Washington-Rochambeau Revolutionary Route National Historic Trail

Puerto Rico

San Juan National Historic Site *

Rhode Island

Blackstone River Valley National Historical Park
John H. Chafee Blackstone River Valley National Heritage Corridor
Roger Williams National Memorial
Touro Synagogue National Historic Site
Washington-Rochambeau Revolutionary Route National Historic Trail

South Carolina

Charles Pinckney National Historic Site
Congaree National Park *
Cowpens National Battlefield
Eutaw Springs Battlefield
Fort Sumter and Fort Moultrie National Historical Park *
Gullah/Geechee Cultural Heritage Co
Historic Camden Revolutionary War Site
Kings Mountain National Military Park
Ninety Six National Historic Site
Overmountain Victory National Historic Trail
Reconstruction Era National Historical Park *
South Carolina National Heritage Corridor

South Dakota

Badlands National Park
Jewel Cave National Monument
Lewis and Clark National Historic Trail
Minuteman Missile National Historic Site
Missouri National Recreational River
Mount Rushmore National Memorial
Wind Cave National Park

Tennessee

Andrew Johnson National Historic Site
Appalachian National Scenic Trail
Big South Fork National River and Recreation Area
Chickamauga and Chattanooga National Military Park
Cumberland Gap National Historical Park
Fort Donelson National Battlefield
Great Smoky Mountains National Park
Manhattan Project National Historical Park *
Natchez Trace National Scenic Trail
Overmountain Victory National Historic Trail
Parkers Crossroads Battlefield
Shiloh National Military Park *
Stones River National Battlefield
Tennessee Civil War National Heritage Area
Trail of Tears National Historic Trail

Texas

Alibates Flint Quarries National Monument
Amistad National Recreation Area *
Big Bend National Park
Big Thicket National Preserve
Blackwell School National Historic Site
Butterfield Overland National Historic Trail
Chamizal National Memorial
El Camino de Tierra Adentro National Historic Trail
El Camino Real de los Tejas National Historic Trail
Fort Davis National Historic Site
Guadalupe Mountains National Park
Lake Meredith National Recreation Area
Lyndon B. Johnson National Historical Park
Padre Island National Seashore *

Palo Alto Battlefield National Historical Park
Rio Grande Wild and Scenic River
San Antonio Missions National Historical Park
Waco Mammoth National Monument

Utah

Arches National Park
Bryce Canyon National Park
California National Historic Trail
Canyonlands National Park
Capitol Reef National Park
Cedar Breaks National Monument
Dinosaur National Monument
Glen Canyon National Recreation Area
Golden Spike National Historical Park
Great Basin National Heritage Route
Hovenweep National Monument
Mormon Pioneer National Heritage Area
Mormon Pioneer National Historic Trail
Natural Bridges National Monument
Old Spanish National Historic Trail
Pony Express National Historic Trail
Rainbow Bridge National Monument
Timpanogos Cave National Monument
Zion National Park

Vermont

Appalachian National Scenic Trail
Champlain Valley National Heritage Partnership
Marsh-Billings-Rockefeller National Historical Park
North Country National Scenic Trail

Virgin Islands

Buck Island Reef National Monument *
Christiansted National Historic Site *
Salt River Bay National Historical Park and Ecological Preserve *
Virgin Islands Coral Reef National Monument *
Virgin Islands National Park *

Virginia

Appalachian National Scenic Trail
Appomattox Court House National Historical Park
Arlington House, The Robert E. Lee Memorial
Assateague Island National Seashore
Blue Ridge Parkway
Booker T. Washington National Monument
Captain John Smith Chesapeake National Historic Trail
Cedar Creek and Belle Grove National Historical Park
Colonial National Historical Park *
Cumberland Gap National Historical Park
Fort Monroe National Monument *
Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park *
George Washington Birthplace National Monument *
George Washington Memorial Parkway
Green Springs National Historic Landmark District
Harpers Ferry National Historical Park
Jamestown National Historic Site
Journey Through Hallowed Ground National Heritage Area
Maggie L. Walker National Historic Site
Manassas National Battlefield Park
Natural Bridge State Park
Overmountain Victory National Historic Trail
Petersburg National Battlefield *
Potomac Heritage National Scenic Trail
Prince William Forest Park
Red Hill Patrick Henry National Memorial
Richmond National Battlefield Park *
Shenandoah National Park
Shenandoah Valley Battlefields National Historic District
Star-Spangled Banner National Historic Trail
Washington-Rochambeau Revolutionary Route National Historic Trail
Wolf Trap National Park for the Performing Arts

Washington

Ebey's Landing National Historical Reserve *
Fort Vancouver National Historic Site *
Klondike Gold Rush National Historical Park
Lake Chelan National Recreation Area
Lake Roosevelt National Recreation Area *
Lewis and Clark National Historic Trail
Lewis and Clark National Historical Park
Manhattan Project National Historical Park
Maritime Washington National Heritage Area
Mount Rainier National Park
Mountains to Sound Greenway National Heritage Area
Nez Perce National Historical Park
North Cascades National Park
Olympic National Park *
Oregon National Historic Trail
Pacific Crest National Scenic Trail
Pacific Northwest National Scenic Trail
Ross Lake National Recreation Area
San Juan Island National Historical Park *
Whitman Mission National Historic Site
Wing Luke Museum of the Asian Pacific American Experience

West Virginia

Appalachian Forest National Heritage Area
Appalachian National Scenic Trail
Bluestone National Scenic River
Chesapeake and Ohio Canal National Historical Park
Gauley River National Recreation Area
Harpers Ferry National Historical Park
Lewis and Clark National Historic Trail
National Coal National Heritage Area
New River Gorge National Park and Preserve
Wheeling National Heritage Area

Wisconsin

Apostle Islands National Lakeshore *
Ice Age National Scenic Trail
Ice Age National Scientific Reserve
North Country National Scenic Trail
Saint Croix National Scenic Riverway

Wyoming

Bighorn Canyon National Recreation Area
California National Historic Trail
Continental Divide National Scenic Trail
Devils Tower National Monument
Fort Laramie National Historic Site
Fossil Butte National Monument
Grand Teton National Park
John D. Rockefeller Jr. Memorial Parkway
Mormon Pioneer National Historic Trail
Nez Perce (Nee-Me-Poo) National Historic Trail
Oregon National Historic Trail
Pony Express National Historic Trail
Yellowstone National Park

A.4 National Wildlife Refuges

Alabama

Bon Secour National Wildlife Refuge *
Cahaba River National Wildlife Refuge
Choctaw National Wildlife Refuge *
Eufaula National Wildlife Refuge *
Fern Cave National Wildlife Refuge
Grand Bay National Wildlife Refuge *
Key Cave National Wildlife Refuge *
Mountain Longleaf National Wildlife Refuge
Sauta Cave National Wildlife Refuge
Watercress Darter National Wildlife Refuge
Wheeler National Wildlife Refuge *

Alaska

Alaska Maritime National Wildlife Refuge *
Alaska Peninsula National Wildlife Refuge *
Arctic National Wildlife Refuge *
Becharof National Wildlife Refuge *
Innoko National Wildlife Refuge *
Izembek National Wildlife Refuge *
Kanuti National Wildlife Refuge *
Kenai National Wildlife Refuge *
Kodiak National Wildlife Refuge *
Koyukuk National Wildlife Refuge *
Nowitna National Wildlife Refuge *
Selawik National Wildlife Refuge *
Tetlin National Wildlife Refuge
Togiak National Wildlife Refuge *
Yukon Delta National Wildlife Refuge *
Yukon Flats National Wildlife Refuge *

American Samoa

Rose Atoll National Wildlife Refuge *

Arizona

Bill Williams River National Wildlife Refuge
Buenos Aires National Wildlife Refuge
Cabeza Prieta National Wildlife Refuge
Cibola National Wildlife Refuge
Havasu National Wildlife Refuge
Imperial National Wildlife Refuge
Kofa National Wildlife Refuge
Leslie Canyon National Wildlife Refuge
San Bernardino National Wildlife Refuge

Arkansas

Bald Knob National Wildlife Refuge
Big Lake National Wildlife Refuge
Cache River National Wildlife Refuge *
Dale Bumpers White River National Wildlife Refuge *
Felsenthal National Wildlife Refuge *
Holla Bend National Wildlife Refuge *
Logan Cave National Wildlife Refuge
Overflow National Wildlife Refuge
Pond Creek National Wildlife Refuge
Wapanocca National Wildlife Refuge

California

Antioch Dunes National Wildlife Refuge *
Bitter Creek National Wildlife Refuge
Blue Ridge National Wildlife Refuge
Butte Sink Wildlife Management Area
Castle Rock National Wildlife Refuge *
Cibola National Wildlife Refuge
Clear Lake National Wildlife Refuge
Coachella Valley National Wildlife Refuge
Colusa National Wildlife Refuge
Delevan National Wildlife Refuge
Don Edwards San Francisco Bay National Wildlife Refuge *
Ellicott Slough National Wildlife Refuge
Farallon Islands National Wildlife Refuge *
Grasslands Wildlife Management Area
Guadalupe-Nipomo Dunes National Wildlife Refuge *
Havasu National Wildlife Refuge
Hopper Mountain National Wildlife Refuge
Humboldt Bay National Wildlife Refuge *

Imperial National Wildlife Refuge
Kern National Wildlife Refuge
Lower Klamath National Wildlife Refuge
Marin Islands National Wildlife Refuge *
Merced National Wildlife Refuge
Modoc National Wildlife Refuge
Pixley National Wildlife Refuge
Sacramento National Wildlife Refuge
Sacramento River National Wildlife Refuge *
Salinas River National Wildlife Refuge *
San Diego Bay National Wildlife Refuge *
San Diego National Wildlife Refuge
San Joaquin River National Wildlife Refuge
San Luis National Wildlife Refuge
San Pablo Bay National Wildlife Refuge *
Seal Beach National Wildlife Refuge *
Sonny Bono Salton Sea National Wildlife Refuge
Steve Thompson North Central Valley Wildlife Management Area *
Stone Lakes National Wildlife Refuge *
Sutter National Wildlife Refuge
Tijuana Slough National Wildlife Refuge *
Tulare Basin Wildlife Management Area
Tule Lake National Wildlife Refuge
Willow Creek-Lurline Wildlife Management Area

Colorado

Alamosa National Wildlife Refuge
Arapaho National Wildlife Refuge
Baca National Wildlife Refuge
Browns Park National Wildlife Refuge
Colorado River Wildlife Management Area
Monte Vista National Wildlife Refuge
Rocky Flats National Wildlife Refuge
Rocky Mountain Arsenal National Wildlife Refuge
San Luis Valley Conservation Area
Sangre De Cristo Conservation Area
Two Ponds National Wildlife Refuge

Connecticut

Great Thicket National Wildlife Refuge *
Silvio O. Conte National Fish And Wildlife Refuge
Stewart B. Mckinney National Wildlife Refuge *

Delaware

Bombay Hook National Wildlife Refuge *
Prime Hook National Wildlife Refuge *

Florida

Archie Carr National Wildlife Refuge *
Arthur R. Marshall Loxahatchee National Wildlife Refuge
Caloosahatchee National Wildlife Refuge *
Cedar Keys National Wildlife Refuge *
Chassahowitzka National Wildlife Refuge *
Crocodile Lake National Wildlife Refuge *
Crystal River National Wildlife Refuge *
Egmont Key National Wildlife Refuge *
Everglades Headwaters National Wildlife Refuge And Conservation Area
Everglades To Gulf Conservation Area
Florida Panther National Wildlife Refuge
Great White Heron National Wildlife Refuge *
Island Bay National Wildlife Refuge *
J. N. Ding Darling National Wildlife Refuge *
Key West National Wildlife Refuge
Lake Wales Ridge National Wildlife Refuge
Lake Woodruff National Wildlife Refuge *
Lower Suwannee National Wildlife Refuge *
Matlacha Pass National Wildlife Refuge *
Merritt Island National Wildlife Refuge *
Nathaniel P. Reed Hobe Sound National Wildlife Refuge *
National Key Deer Refuge *
Okefenokee National Wildlife Refuge
Passage Key National Wildlife Refuge *
Pelican Island National Wildlife Refuge *
Pine Island National Wildlife Refuge *
Pinellas National Wildlife Refuge *
St. Johns National Wildlife Refuge
St. Marks National Wildlife Refuge *
St. Vincent National Wildlife Refuge *
Ten Thousand Islands National Wildlife Refuge *

Georgia

Banks Lake National Wildlife Refuge
Blackbeard Island National Wildlife Refuge *
Bond Swamp National Wildlife Refuge *
Eufaula National Wildlife Refuge *
Harris Neck National Wildlife Refuge
Okefenokee National Wildlife Refuge
Piedmont National Wildlife Refuge
Savannah National Wildlife Refuge *
Wassaw National Wildlife Refuge *
Wolf Island National Wildlife Refuge *

Guam

Guam National Wildlife Refuge *

Hawaii

Hakalau Forest National Wildlife Refuge
Hanalei National Wildlife Refuge
Hawaiian Islands National Wildlife Refuge *
Hul'ia National Wildlife Refuge
James Campbell National Wildlife Refuge *
Kakahai'a National Wildlife Refuge *
Kelia Pond National Wildlife Refuge *
Kilauea Point National Wildlife Refuge *
Ohahu Forest National Wildlife Refuge
Pearl Harbor National Wildlife Refuge *

Idaho

Bear Lake National Wildlife Refuge
Bear River Watershed Conservation Area
Camas National Wildlife Refuge
Deer Flat National Wildlife Refuge
Grays Lake National Wildlife Refuge
Kootenai National Wildlife Refuge
Minidoka National Wildlife Refuge
Oxford Slough Waterfowl Production Area

Illinois

Chautauqua National Wildlife Refuge *
Clarence Cannon National Wildlife Refuge *
Crab Orchard National Wildlife Refuge
Cypress Creek National Wildlife Refuge *
Emiquon National Wildlife Refuge *
Great River National Wildlife Refuge *
Hackmatack National Wildlife Refuge
Kankakee National Wildlife Refuge And Conservation Area
Meredosia National Wildlife Refuge *
Middle Mississippi River National Wildlife Refuge *
Port Louisa National Wildlife Refuge
Two Rivers National Wildlife Refuge *
Upper Mississippi River National Wildlife And Fish Refuge *

Indiana

Big Oaks National Wildlife Refuge
Muscatatuck National Wildlife Refuge
Patoka River National Wildlife Refuge and Management Area

Iowa

Desoto National Wildlife Refuge *
Driftless Area National Wildlife Refuge
Iowa Wetland Management District
Neal Smith National Wildlife Refuge
Northern Tallgrass Prairie National Wildlife Refuge
Port Louisa National Wildlife Refuge *
Union Slough National Wildlife Refuge
Upper Mississippi River National Wildlife and Fish Refuge *

Kansas

Flint Hills Legacy Conservation Area
Flint Hills National Wildlife Refuge
Kirwin National Wildlife Refuge
Marais Des Cygnes National Wildlife Refuge
Quivira National Wildlife Refuge

Kentucky

Clarks River National Wildlife Refuge
Green River National Wildlife Refuge *
Ohio River Islands National Wildlife Refuge *
Reelfoot National Wildlife Refuge

Louisiana

Atchafalaya National Wildlife Refuge
Bayou Cocodrie National Wildlife Refuge
Bayou Sauvage Urban National Wildlife Refuge *
Bayou Teche National Wildlife Refuge *
Big Branch Marsh National Wildlife Refuge *
Black Bayou Lake National Wildlife Refuge
Bogue Chitto National Wildlife Refuge *
Breton National Wildlife Refuge *
Cameron Prairie National Wildlife Refuge *
Cat Island National Wildlife Refuge *
Catahoula National Wildlife Refuge
D'Arbonne National Wildlife Refuge
Delta National Wildlife Refuge *
Grand Cote National Wildlife Refuge
Handy Brake National Wildlife Refuge
Lacassine National Wildlife Refuge *
Lake Ophelia National Wildlife Refuge *
Mandalay National Wildlife Refuge *
Red River National Wildlife Refuge *
Sabine National Wildlife Refuge *
Shell Keys National Wildlife Refuge *
Tensas River National Wildlife Refuge
Upper Ouachita National Wildlife Refuge *

Maine

Aroostook National Wildlife Refuge
Carlton Pond Waterfowl Production Area
Cross Island National Wildlife Refuge *
Franklin Island National Wildlife Refuge *
Great Thicket National Wildlife Refuge *
Moosehorn National Wildlife Refuge
Petit Manan National Wildlife Refuge *
Pond Island National Wildlife Refuge *
Rachel Carson National Wildlife Refuge *
Seal Island National Wildlife Refuge *
Sunkhaze Meadows National Wildlife Refuge
Umbagog National Wildlife Refuge

Maryland

Blackwater National Wildlife Refuge *
Chincoteague National Wildlife Refuge *
Eastern Neck National Wildlife Refuge *
Martin National Wildlife Refuge *
Patuxent Research Refuge
Susquehanna National Wildlife Refuge *

Massachusetts

Assabet River National Wildlife Refuge
Great Meadows National Wildlife Refuge
Mashpee National Wildlife Refuge
Massasoit National Wildlife Refuge
Monomoy National Wildlife Refuge *

Nantucket National Wildlife Refuge *
Nomans Land Island National Wildlife Refuge *
Oxbow National Wildlife Refuge
Parker River National Wildlife Refuge *
Silvio O. Conte National Fish And Wildlife Refuge *
Thacher Island National Wildlife Refuge *

Michigan

Detroit River International Wildlife Refuge *
Green Bay National Wildlife Refuge *
Harbor Island National Wildlife Refuge *
Huron National Wildlife Refuge *
Kirtland's Warbler Wildlife Management Area
Michigan Islands National Wildlife Refuge *
Michigan Wetland Management District
Seney National Wildlife Refuge *
Shiawassee National Wildlife Refuge

Minnesota

Agassiz National Wildlife Refuge
Big Stone National Wildlife Refuge
Big Stone Wetland Management District
Crane Meadows National Wildlife Refuge
Detroit Lakes Wetland Management District
Fergus Falls Wetland Management District
Glacial Ridge National Wildlife Refuge
Hamden Slough National Wildlife Refuge
Litchfield Wetland Management District
Mille Lacs National Wildlife Refuge
Minnesota Valley National Wildlife Refuge *
Minnesota Valley Wetland Management District
Morris Wetland Management District
Northern Tallgrass Prairie National Wildlife Refuge
Rice Lake National Wildlife Refuge
Rydell National Wildlife Refuge
Sherburne National Wildlife Refuge
Tamarac National Wildlife Refuge
Tamarac Wetland Management District
Upper Mississippi River National Wildlife And Fish Refuge *
Windom Wetland Management District

Mississippi

Bogue Chitto National Wildlife Refuge *
Coldwater River National Wildlife Refuge
Dahomey National Wildlife Refuge
Grand Bay National Wildlife Refuge *
Hillside National Wildlife Refuge
Holt Collier National Wildlife Refuge
Mathews Brake National Wildlife Refuge *
Mississippi Sandhill Crane National Wildlife Refuge *
Morgan Brake National Wildlife Refuge
Panther Swamp National Wildlife Refuge *
Sam D. Hamilton Noxubee National Wildlife Refuge
St. Catherine Creek National Wildlife Refuge *
Tallahatchie National Wildlife Refuge
Theodore Roosevelt National Wildlife Refuge *
Yazoo National Wildlife Refuge

Missouri

Big Muddy National Fish And Wildlife Refuge *
Clarence Cannon National Wildlife Refuge *
Great River National Wildlife Refuge
Loess Bluffs National Wildlife Refuge
Middle Mississippi River National Wildlife Refuge *
Mingo National Wildlife Refuge
Ozark Cavefish National Wildlife Refuge
Pilot Knob National Wildlife Refuge
Swan Lake National Wildlife Refuge
Two Rivers National Wildlife Refuge

Montana

Benton Lake National Wildlife Refuge
Benton Lake Wetland Management District
Black Coulee National Wildlife Refuge
Blackfoot Valley Conservation Area
Bowdoin National Wildlife Refuge
Bowdoin Wetland Management District
Charles M. Russell National Wildlife Refuge
Charles M. Russell Wetland Management District
Creedman Coulee National Wildlife Refuge
Grass Lake National Wildlife Refuge
Hailstone National Wildlife Refuge
Hewitt Lake National Wildlife Refuge
Lake Mason National Wildlife Refuge
Lake Thibadeau National Wildlife Refuge
Lamesteer National Wildlife Refuge
Lee Metcalf National Wildlife Refuge
Lost Trail Conservation Area
Lost Trail National Wildlife Refuge
Medicine Lake National Wildlife Refuge
Ninepipe National Wildlife Refuge
Northeast Montana Wetland Management District
Northwest Montana Wetland Management District
Pablo National Wildlife Refuge
Red Rock Lakes National Wildlife Refuge
Rocky Mountain Front Conservation Area
Swan River National Wildlife Refuge
Swan Valley Conservation Area
UL
Bend National Wildlife Refuge
War Horse National Wildlife Refuge

Nebraska

Boyer Chute National Wildlife Refuge *
Crescent Lake National Wildlife Refuge
Desoto National Wildlife Refuge *
Fort Niobrara National Wildlife Refuge
John W. and Louise Seier National Wildlife Refuge
Karl E. Mundt National Wildlife Refuge
North Platte National Wildlife Refuge
Rainwater Basin Wetland Management District
Valentine National Wildlife Refuge

Nevada

Anaho Island National Wildlife Refuge
Ash Meadows National Wildlife Refuge
Desert National Wildlife Refuge
Fallon National Wildlife Refuge
Moapa Valley National Wildlife Refuge
Pahranagat National Wildlife Refuge
Ruby Lake National Wildlife Refuge
Sheldon National Wildlife Refuge
Stillwater National Wildlife Refuge

New Hampshire

Great Bay National Wildlife Refuge *
John Hay National Wildlife Refuge
Silvio O. Conte National Fish And Wildlife Refuge *
Umbagog National Wildlife Refuge
Wapack National Wildlife Refuge

New Jersey

Cape May National Wildlife Refuge *
Edwin B. Forsythe National Wildlife Refuge *
Great Swamp National Wildlife Refuge
Supawna Meadows National Wildlife Refuge *
Wallkill River National Wildlife Refuge

New Mexico

Bitter Lake National Wildlife Refuge
Bosque Del Apache National Wildlife Refuge
Grulla National Wildlife Refuge
Las Vegas National Wildlife Refuge
Maxwell National Wildlife Refuge
Rio Mora National Wildlife Refuge and Conservation Area
San Andres National Wildlife Refuge
Sangre De Cristo Conservation Area
Sevilleta National Wildlife Refuge
Valle De Oro National Wildlife Refuge

New York

Amagansett National Wildlife Refuge *
Congressman Lester Wolff Oyster Bay National Wildlife Refuge *
Conscience Point National Wildlife Refuge *
Elizabeth A. Morton National Wildlife Refuge *
Great Thicket National Wildlife Refuge *
Iroquois National Wildlife Refuge
Lido Beach Wildlife Management Area *
Montezuma National Wildlife Refuge *
Seatuck National Wildlife Refuge *
Shawangunk Grasslands National Wildlife Refuge
Target Rock National Wildlife Refuge *
Wallkill River National Wildlife Refuge
Wertheim National Wildlife Refuge *

North Carolina

Alligator River National Wildlife Refuge *
Cedar Island National Wildlife Refuge *
Currituck National Wildlife Refuge *
Great Dismal Swamp National Wildlife Refuge *
Mackay Island National Wildlife Refuge *
Mattamuskeet National Wildlife Refuge
Mountain Bogs National Wildlife Refuge
Pea Island National Wildlife Refuge *
Pee Dee National Wildlife Refuge
Pocosin Lakes National Wildlife Refuge *
Roanoke River National Wildlife Refuge *
Swanquarter National Wildlife Refuge *

North Dakota

Appert Lake National Wildlife Refuge
Ardoch National Wildlife Refuge
Arrowwood National Wildlife Refuge
Arrowwood Wetland Management District
Audubon National Wildlife Refuge
Audubon Wetland Management District
Bone Hill National Wildlife Refuge
Brumba National Wildlife Refuge
Buffalo Lake National Wildlife Refuge
Camp Lake National Wildlife Refuge
Canfield Lake National Wildlife Refuge
Chase Lake National Wildlife Refuge
Chase Lake Wetland Management District
Cottonwood Lake National Wildlife Refuge
Crosby Wetland Management District
Dakota Grassland Conservation Area
Dakota Lake National Wildlife Refuge
Dakota Tallgrass Prairie Wildlife Management Area
Des Lacs National Wildlife Refuge
Devils Lake Wetland Management District
Florence Lake National Wildlife Refuge
Half-Way Lake National Wildlife Refuge
Hiddenwood National Wildlife Refuge
Hobart Lake National Wildlife Refuge
Hutchinson Lake National Wildlife Refuge

J. Clark Salyer National Wildlife Refuge
J. Clark Salyer Wetland Management District
Johnson Lake National Wildlife Refuge
Kellys Slough National Wildlife Refuge
Kulm Wetland Management District
Lake Alice National Wildlife Refuge
Lake George National Wildlife Refuge
Lake Ilo National Wildlife Refuge
Lake Nettie National Wildlife Refuge
Lake Otis National Wildlife Refuge
Lake Patricia National Wildlife Refuge
Lake Zahl National Wildlife Refuge
Lambs Lake National Wildlife Refuge
Little Goose National Wildlife Refuge
Long Lake National Wildlife Refuge
Long Lake Wetland Management District
Lords Lake National Wildlife Refuge
Lost Lake National Wildlife Refuge
Lostwood National Wildlife Refuge
Lostwood Wetland Management District
Maple River National Wildlife Refuge
Mclean National Wildlife Refuge
North Dakota Wildlife Management Area
Pleasant Lake National Wildlife Refuge
Pretty Rock National Wildlife Refuge
Rabb Lake National Wildlife Refuge
Rock Lake National Wildlife Refuge
Rose Lake National Wildlife Refuge
School Section Lake National Wildlife Refuge
Shell Lake National Wildlife Refuge
Sheyenne Lake National Wildlife Refuge
Sibley Lake National Wildlife Refuge
Silver Lake National Wildlife Refuge
Slade National Wildlife Refuge
Snyder Lake National Wildlife Refuge
Springwater National Wildlife Refuge
Stewart Lake National Wildlife Refuge
Stoney Slough National Wildlife Refuge
Storm Lake National Wildlife Refuge
Stump Lake National Wildlife Refuge
Sunburst Lake National Wildlife Refuge
Tewaukon National Wildlife Refuge
Tewaukon Wetland Management District
Tomahawk National Wildlife Refuge
Upper Souris National Wildlife Refuge
Valley City Wetland Management District
White Horse Hill National Game Preserve
White Lake National Wildlife Refuge
Wild Rice Lake National Wildlife Refuge
Willow Lake National Wildlife Refuge
Wintering River National Wildlife Refuge
Wood Lake National Wildlife Refuge

Ohio

Cedar Point National Wildlife Refuge *
Ottawa National Wildlife Refuge *
West Sister Island National Wildlife Refuge *

Oklahoma

Deep Fork National Wildlife Refuge
Little River National Wildlife Refuge
Optima National Wildlife Refuge
Ozark Plateau National Wildlife Refuge
Salt Plains National Wildlife Refuge
Sequoyah National Wildlife Refuge *
Tishomingo National Wildlife Refuge
Washita National Wildlife Refuge
Wichita Mountains Wildlife Refuge

Oregon

Ankeny National Wildlife Refuge *
Bandon Marsh National Wildlife Refuge *
Baskett Slough National Wildlife Refuge
Bear Valley National Wildlife Refuge
Cape Meares National Wildlife Refuge *
Cold Springs National Wildlife Refuge
Deer Flat National Wildlife Refuge
Hart Mountain National Antelope Refuge
Julia Butler Hansen Refuge For The Columbian White Tail Deer *
Klamath Marsh National Wildlife Refuge
Lewis And Clark National Wildlife Refuge *
Lower Klamath National Wildlife Refuge
Malheur National Wildlife Refuge
Mckay Creek National Wildlife Refuge
Mcnary National Wildlife Refuge *
Nestucca Bay National Wildlife Refuge *
Oregon Islands National Wildlife Refuge *
Sheldon National Wildlife Refuge
Siletz Bay National Wildlife Refuge *
Three Arch Rocks National Wildlife Refuge *
Tualatin River National Wildlife Refuge
Umatilla National Wildlife Refuge *
Upper Klamath National Wildlife Refuge
Wapato Lake National Wildlife Refuge
William L. Finley National Wildlife Refuge

Pennsylvania

Cherry Valley National Wildlife Refuge
Erie National Wildlife Refuge
John Heinz National Wildlife Refuge At Tinicum
Ohio River Islands National Wildlife Refuge *

Puerto Rico

Cabo Rojo National Wildlife Refuge *
Culebra National Wildlife Refuge *
Desecheo National Wildlife Refuge *
Laguna Cartagena National Wildlife Refuge
Vieques National Wildlife Refuge *

Rhode Island

Block Island National Wildlife Refuge *
John H. Chafee National Wildlife Refuge
Ninigret National Wildlife Refuge *
Sachuest Point National Wildlife Refuge *
Trustom Pond National Wildlife Refuge *

South Carolina

Cape Romain National Wildlife Refuge *
Carolina Sandhills National Wildlife Refuge
Ernest F. Hollings Ace Basin National Wildlife Refuge *
Pinckney Island National Wildlife Refuge *
Santee National Wildlife Refuge *
Savannah National Wildlife Refuge *
Tybee National Wildlife Refuge *
Waccamaw National Wildlife Refuge *

South Dakota

Bear Butte National Wildlife Refuge
Dakota Grassland Conservation Area
Dakota Tallgrass Prairie Wildlife Management Area
Huron Wetland Management District
Karl E. Mundt National Wildlife Refuge
Lacreek National Wildlife Refuge
Lake Andes National Wildlife Refuge
Lake Andes Wetland Management District
Madison Wetland Management District
Sand Lake National Wildlife Refuge
Sand Lake Wetland Management District
Waubay National Wildlife Refuge
Waubay Wetland Management District

Tennessee

Chickasaw National Wildlife Refuge *
Cross Creeks National Wildlife Refuge *
Hatchie National Wildlife Refuge
Lake Isom National Wildlife Refuge
Lower Hatchie National Wildlife Refuge *
Paint Rock River National Wildlife Refuge
Reelfoot National Wildlife Refuge
Tennessee National Wildlife Refuge *

Texas

Anahuac National Wildlife Refuge *
Aransas National Wildlife Refuge *
Attwater Prairie Chicken National Wildlife Refuge
Balcones Canyonlands National Wildlife Refuge
Big Boggy National Wildlife Refuge *
Brazoria National Wildlife Refuge *
Buffalo Lake National Wildlife Refuge
Caddo Lake National Wildlife Refuge
Grulla National Wildlife Refuge
Hagerman National Wildlife Refuge
Laguna Atascosa National Wildlife Refuge *
Little Sandy National Wildlife Refuge
Lower Rio Grande Valley National Wildlife Refuge *
Mcfaddin National Wildlife Refuge *
Moody National Wildlife Refuge *
Muleshoe National Wildlife Refuge
Neches River National Wildlife Refuge
San Bernard National Wildlife Refuge *
Santa Ana National Wildlife Refuge
Texas Point National Wildlife Refuge *
Trinity River National Wildlife Refuge *

United States Minor Outlying Islands

Baker Island National Wildlife Refuge *
Howland Island National Wildlife Refuge *
Jarvis Island National Wildlife Refuge *
Johnston Atoll National Wildlife Refuge *
Kingman Reef National Wildlife Refuge *
Mariana Arc Of Fire National Wildlife Refuge *
Mariana Trench National Wildlife Refuge
Midway Atoll National Wildlife Refuge *
Navassa Island National Wildlife Refuge *
Palmyra Atoll National Wildlife Refuge *
Wake Atoll National Wildlife Refuge *

Utah

Bear River Migratory Bird Refuge
Bear River Watershed Conservation Area
Colorado River Wildlife Management Area
Fish Springs National Wildlife Refuge
Ouray National Wildlife Refuge

Vermont

Missisquoi National Wildlife Refuge *
Silvio O. Conte National Fish And Wildlife Refuge *

Virgin Islands

Buck Island National Wildlife Refuge *
Green Cay National Wildlife Refuge *
Sandy Point National Wildlife Refuge *

Virginia

Back Bay National Wildlife Refuge *
Chincoteague National Wildlife Refuge *
Eastern Shore Of Virginia National Wildlife Refuge *
Elizabeth Hartwell Mason Neck National Wildlife Refuge *
Featherstone National Wildlife Refuge *
Fisherman Island National Wildlife Refuge *
Great Dismal Swamp National Wildlife Refuge *
James River National Wildlife Refuge *
Mackay Island National Wildlife Refuge *
Martin National Wildlife Refuge *
Nansemond National Wildlife Refuge *
Occoquan Bay National Wildlife Refuge *
Plum Tree Island National Wildlife Refuge *
Presquile National Wildlife Refuge *
Rappahannock River Valley National Wildlife Refuge *

Wallops Island National Wildlife Refuge *

Washington

Billy Frank Jr. Nisqually National Wildlife Refuge *
Columbia National Wildlife Refuge
Conboy Lake National Wildlife Refuge
Copalis National Wildlife Refuge *
Dungeness National Wildlife Refuge *
Flattery Rocks National Wildlife Refuge *
Franz Lake National Wildlife Refuge *
Grays Harbor National Wildlife Refuge *
Julia Butler Hansen Refuge For The Columbian White Tail Deer
Little Pend Oreille National Wildlife Refuge
Mcnary National Wildlife Refuge *
Pierce National Wildlife Refuge
Protection Island National Wildlife Refuge *
Quillayute Needles National Wildlife Refuge *
Ridgefield National Wildlife Refuge *
Saddle Mountain National Wildlife Refuge
San Juan Islands National Wildlife Refuge *
Steigerwald Lake National Wildlife Refuge
Toppenish National Wildlife Refuge
Turnbull National Wildlife Refuge
Umatilla National Wildlife Refuge *
Willapa National Wildlife Refuge *

West Virginia

Canaan Valley National Wildlife Refuge
Ohio River Islands National Wildlife Refuge *

Wisconsin

Fox River National Wildlife Refuge
Gravel Island National Wildlife Refuge *
Green Bay National Wildlife Refuge *
Hackmatack National Wildlife Refuge
Horicon National Wildlife Refuge
Leopold Wetland Management District
Necedah National Wildlife Refuge
St. Croix Wetland Management District
Trempealeau National Wildlife Refuge *
Upper Mississippi River National Wildlife And Fish Refuge *
Whittlesey Creek National Wildlife Refuge *

Wyoming

Bamforth National Wildlife Refuge
Bear River Watershed Conservation Area
Cokeville Meadows National Wildlife Refuge
Hutton Lake National Wildlife Refuge
Mortenson Lake National Wildlife Refuge
National Elk Refuge
Pathfinder National Wildlife Refuge
Seedskadee National Wildlife Refuge
Wyoming Toad Conservation Area

A.5 National Wilderness Areas

Alabama

Cheaha Wilderness
Dugger Mountain Wilderness
Sipsey Wilderness

Alaska

Aleutian Islands Wilderness *
Andreafsky Wilderness
Becharof Wilderness *
Bering Sea Wilderness *
Bogoslof Wilderness *
Chamisso Wilderness *
Chuck River Wilderness *
Coronation Island Wilderness *
Denali Wilderness
Endicott River Wilderness
Forrester Island Wilderness *
Gates of the Arctic Wilderness *
Glacier Bay Wilderness *
Hazy Islands Wilderness *
Innoko Wilderness
Izembek Wilderness *
Jay S. Hammond Wilderness *
Karta River Wilderness *
Katmai Wilderness *
Kenai Wilderness *
Kobuk Valley Wilderness *
Kootznoowoo Wilderness *
Koyukuk Wilderness *
Kuiu Wilderness *
Maurelle Islands Wilderness *
Misty Fjords National Monument Wilderness *
Mollie Beattie Wilderness *
Noatak Wilderness
Nunivak Wilderness *
Petersburg Creek-Duncan Salt Chuck Wilderness *
Pleasant/Lemusurier/Inian Islands Wilderness *
Russell Fjord Wilderness *
Saint Lazaria Wilderness *
Selawik Wilderness
Semidi Wilderness *
Simeonof Wilderness *
South Baranof Wilderness *
South Etolin Wilderness *
South Prince of Wales Wilderness *
Stikine-LeConte Wilderness *
Tebenkof Bay Wilderness *
Togiak Wilderness
Tracy Arm-Fords Terror Wilderness *
Tuxedni Wilderness *
Unimak Wilderness *
Warren Island Wilderness *
West Chichagof-Yakobi Wilderness *
Wrangell-Saint Elias Wilderness *

Arizona

Apache Creek Wilderness
Aravaipa Canyon Wilderness
Arrastra Mountain Wilderness
Aubrey Peak Wilderness
Baboquivari Peak Wilderness
Bear Wallow Wilderness
Beaver Dam Mountains Wilderness
Big Horn Mountains Wilderness
Cabeza Prieta Wilderness
Castle Creek Wilderness
Cedar Bench Wilderness
Chiricahua National Monument Wilderness
Chiricahua Wilderness
Cottonwood Point Wilderness
Coyote Mountains Wilderness
Dos Cabezas Mountains Wilderness
Eagletail Mountains Wilderness
East Cactus Plain Wilderness
Escudilla Wilderness
Fishhooks Wilderness
Fossil Springs Wilderness
Four Peaks Wilderness
Galiuro Wilderness
Gibraltar Mountain Wilderness
Grand Wash Cliffs Wilderness
Granite Mountain Wilderness
Harcuvar Mountains Wilderness
Harquahala Mountains Wilderness
Hassayampa River Canyon Wilderness
Havasu Wilderness
Hells Canyon Wilderness
Hellsgate Wilderness
Hummingbird Springs Wilderness
Imperial Refuge Wilderness
Juniper Mesa Wilderness
Kachina Peaks Wilderness
Kanab Creek Wilderness
Kendrick Mountain Wilderness
Kofa Wilderness
Mazatzal Wilderness
Miller Peak Wilderness
Mount Baldy Wilderness
Mount Logan Wilderness
Mount Nutt Wilderness
Mount Tipton Wilderness
Mount Trumbull Wilderness
Mount Wilson Wilderness
Mt. Wrightson Wilderness
Muggins Mountain Wilderness
Munds Mountain Wilderness
Needle's Eye Wilderness
New Water Mountains Wilderness
North Maricopa Mountains Wilderness
North Santa Teresa Wilderness
Organ Pipe Cactus Wilderness
Paiute Wilderness
Pajarita Wilderness
Paria Canyon-Vermilion Cliffs Wilderness
Peloncillo Mountains Wilderness
Petrified Forest National Wilderness Area
Pine Mountain Wilderness
Pusch Ridge Wilderness
Rawhide Mountains Wilderness
Red Rock-Secret Mountain Wilderness
Redfield Canyon Wilderness
Rincon Mountain Wilderness
Saddle Mountain Wilderness
Saguaro Wilderness
Salome Wilderness
Salt River Canyon Wilderness
Santa Teresa Wilderness
Sierra Ancha Wilderness
Sierra Estrella Wilderness
Signal Mountain Wilderness
South Maricopa Mountains Wilderness
Strawberry Crater Wilderness
Superstition Wilderness
Swansea Wilderness
Sycamore Canyon Wilderness
Table Top Wilderness
Tres Alamos Wilderness
Trigo Mountain Wilderness
Upper Burro Creek Wilderness
Wabayuma Peak Wilderness
Warm Springs Wilderness
West Clear Creek Wilderness
Wet Beaver Wilderness
White Canyon Wilderness
Woodchute Wilderness
Woolsey Peak Wilderness

Arkansas

Big Lake Wilderness
Black Fork Mountain Wilderness
Buffalo National River Wilderness *
Caney Creek Wilderness
Dry Creek Wilderness
East Fork Wilderness
Flatside Wilderness
Hurricane Creek Wilderness
Leatherwood Wilderness
Poteau Mountain Wilderness
Richland Creek Wilderness
Upper Buffalo Wilderness

California

Agua Tibia Wilderness
Ansel Adams Wilderness
Argus Range Wilderness
Avawatz Mountains Wilderness

Beauty Mountain Wilderness
Big Maria Mountains Wilderness
Bigelow Cholla Garden Wilderness
Bighorn Mountain Wilderness
Black Mountain Wilderness
Bright Star Wilderness
Bristol Mountains Wilderness
Bucks Lake Wilderness
Buzzards Peak Wilderness
Cache Creek Wilderness
Cadiz Dunes Wilderness
Cahuilla Mountain Wilderness
Caribou Wilderness
Carrizo Gorge Wilderness
Carson-Iceberg Wilderness
Castle Crags Wilderness
Cedar Roughs Wilderness
Chanchelulla Wilderness
Chemehuevi Mountains Wilderness
Chimney Peak Wilderness
Chuckwalla Mountains Wilderness
Chumash Wilderness
Cleghorn Lakes Wilderness
Clipper Mountain Wilderness
Coso Range Wilderness
Coyote Mountains Wilderness
Cucamonga Wilderness
Darwin Falls Wilderness
Dead Mountains Wilderness
Death Valley Wilderness
Desolation Wilderness
Dick Smith Wilderness
Dinkey Lakes Wilderness
Domeland Wilderness
El Paso Mountains Wilderness
Elkhorn Ridge Wilderness
Emigrant Wilderness
Farallon Wilderness *
Fish Creek Mountains Wilderness
Funeral Mountains Wilderness
Garcia Wilderness
Golden Trout Wilderness
Golden Valley Wilderness
Granite Chief Wilderness
Granite Mountain Wilderness
Grass Valley Wilderness
Great Falls Basin Wilderness
Hain Wilderness
Hauser Wilderness
Havasu Wilderness
Hollow Hills Wilderness
Hoover Wilderness
Ibex Wilderness
Imperial Refuge Wilderness
Indian Pass Wilderness
Inyo Mountains Wilderness
Ishi Wilderness
Jacumba Wilderness *
Jennie Lakes Wilderness
John Krebs Wilderness
John Muir Wilderness
Joshua Tree Wilderness
Kaiser Wilderness
Kelso Dunes Wilderness
Kiavah Wilderness
King Range Wilderness *
Kingston Range Wilderness
Lassen Volcanic Wilderness
Lava Beds Wilderness
Little Chuckwalla Mountains Wilderness
Little Picacho Wilderness
Machesna Mountain Wilderness
Magic Mountain Wilderness
Malpais Mesa Wilderness
Manly Peak Wilderness
Marble Mountain Wilderness
Matilija Wilderness
Mecca Hills Wilderness
Mesquite Wilderness
Milpitas Wash Wilderness
Mojave Wilderness
Mokelumne Wilderness
Monarch Wilderness
Mount Lassic Wilderness
Mt. Shasta Wilderness
Newberry Mountains Wilderness
Nopah Range Wilderness
North Algodones Dunes Wilderness
North Fork Wilderness
North Mesquite Mountains Wilderness
Old Woman Mountains Wilderness
Orocopia Mountains Wilderness
Otay Mountain Wilderness *
Owens Peak Wilderness
Owens River Headwaters Wilderness
Pahrump Valley Wilderness
Palen/McCoy Wilderness
Palo Verde Mountains Wilderness
Phillip Burton Wilderness *
Picacho Peak Wilderness
Pine Creek Wilderness
Pinto Mountains Wilderness
Piper Mountain Wilderness
Piute Mountains Wilderness
Pleasant View Ridge Wilderness
Red Buttes Wilderness
Resting Spring Range Wilderness
Rice Valley Wilderness
Riverside Mountains Wilderness
Rocks and Islands Wilderness *
Rodman Mountains Wilderness
Russian Wilderness
Sacatar Trail Wilderness
Saddle Peak Hills Wilderness
San Gabriel Wilderness
San Gorgonio Wilderness
San Jacinto Wilderness
San Mateo Canyon Wilderness
San Rafael Wilderness
Sanhedrin Wilderness
Santa Lucia Wilderness
Santa Rosa Wilderness
Sawtooth Mountains Wilderness
Sequoia-Kings Canyon Wilderness
Sespe Wilderness
Sheep Mountain Wilderness
Sheephole Valley Wilderness
Silver Peak Wilderness
Siskiyou Wilderness
Snow Mountain Wilderness
Soda Mountains Wilderness
South Fork Eel River Wilderness
South Fork San Jacinto Wilderness
South Nopah Range Wilderness
South Sierra Wilderness
South Warner Wilderness
Stateline Wilderness
Stepladder Mountains Wilderness
Surprise Canyon Wilderness
Sylvania Mountains Wilderness
Thousand Lakes Wilderness
Trilobite Wilderness
Trinity Alps Wilderness
Turtle Mountains Wilderness
Ventana Wilderness
Whipple Mountains Wilderness
White Mountains Wilderness
Yolla Bolly-Middle Eel Wilderness
Yosemite Wilderness
Yuki Wilderness

Colorado

Black Canyon of the Gunnison Wilderness
Black Ridge Canyons Wilderness
Buffalo Peaks Wilderness
Byers Peak Wilderness
Cache La Poudre Wilderness
Collegiate Peaks Wilderness
Comanche Peak Wilderness
Dominguez Canyon Wilderness
Eagles Nest Wilderness
Flat Tops Wilderness
Fossil Ridge Wilderness
Great Sand Dunes Wilderness
Greenhorn Mountain Wilderness
Gunnison Gorge Wilderness
Hermosa Creek Wilderness
Holy Cross Wilderness
Hunter-Fryingpan Wilderness
Indian Peaks Wilderness
James Peak Wilderness
La Garita Wilderness
Lizard Head Wilderness
Lost Creek Wilderness
Maroon Bells-Snowmass Wilderness
Mesa Verde Wilderness
Mount Evans Wilderness
Mount Massive Wilderness
Mount Sneffels Wilderness
Mount Zirkel Wilderness
Neota Wilderness
Never Summer Wilderness
Platte River Wilderness
Powderhorn Wilderness
Ptarmigan Peak Wilderness
Raggeds Wilderness
Rawah Wilderness
Rocky Mountain National Park Wilderness
Sangre de Cristo Wilderness
Sarvis Creek Wilderness
South San Juan Wilderness
Spanish Peaks Wilderness
Uncompahgre Wilderness
Vasquez Peak Wilderness
Weminuche Wilderness
West Elk Wilderness

Florida

Alexander Springs Wilderness *
Big Gum Swamp Wilderness
Billies Bay Wilderness
Bradwell Bay Wilderness
Cedar Keys Wilderness *
Chassahowitzka Wilderness *
Florida Keys Wilderness *
Island Bay Wilderness *
J.N. ''Ding'' Darling Wilderness *
Juniper Prairie Wilderness
Lake Woodruff Wilderness *
Little Lake George Wilderness *
Marjory Stoneman Douglas Wilderness *
Mud Swamp/New River Wilderness
Passage Key Wilderness *
Pelican Island Wilderness *
St. Marks Wilderness *

Georgia

Big Frog Wilderness
Blackbeard Island Wilderness *
Blood Mountain Wilderness
Brasstown Wilderness
Cohutta Wilderness
Cumberland Island Wilderness *
Ellicott Rock Wilderness
Mark Trail Wilderness
Okefenokee Wilderness
Raven Cliffs Wilderness
Rich Mountain Wilderness
Southern Nantahala Wilderness

Tray Mountain Wilderness
Wolf Island Wilderness *

Hawaii

Haleakalā Wilderness
Hawai'i Volcanoes Wilderness *

Idaho

Big Jacks Creek Wilderness
Bruneau-Jarbidge Rivers Wilderness
Cecil D. Andrus-White Clouds Wilderness
Craters of the Moon National Wilderness Area
Frank Church-River of No Return Wilderness
Gospel-Hump Wilderness
Hells Canyon Wilderness
Hemingway-Boulders Wilderness
Jim McClure-Jerry Peak Wilderness
Little Jacks Creek Wilderness
North Fork Owyhee Wilderness
Owyhee River Wilderness
Pole Creek Wilderness
Sawtooth Wilderness
Selway-Bitterroot Wilderness

Illinois

Bald Knob Wilderness
Bay Creek Wilderness
Burden Falls Wilderness
Clear Springs Wilderness
Crab Orchard Wilderness
Garden of the Gods Wilderness
Lusk Creek Wilderness
Panther Den Wilderness

Indiana

Charles C. Deam Wilderness

Kentucky

Beaver Creek Wilderness
Clifty Wilderness

Louisiana

Breton Wilderness *
Kisatchie Hills Wilderness
Lacassine Wilderness

Maine

Caribou-Speckled Mountain Wilderness
Moosehorn (Baring Unit) Wilderness
Moosehorn Wilderness *

Massachusetts

Monomoy Wilderness *

Michigan

Beaver Basin Wilderness *
Big Island Lake Wilderness
Delirium Wilderness
Horseshoe Bay Wilderness *
Huron Islands Wilderness *
Isle Royale Wilderness *
Mackinac Wilderness
McCormick Wilderness
Michigan Islands Wilderness *
Nordhouse Dunes Wilderness *
Rock River Canyon Wilderness
Round Island Wilderness *
Seney Wilderness
Sleeping Bear Dunes Wilderness *
Sturgeon River Gorge Wilderness
Sylvania Wilderness

Minnesota

Agassiz Wilderness
Boundary Waters Canoe Area Wilderness *
Tamarac Wilderness

Mississippi

Black Creek Wilderness
Gulf Islands Wilderness *
Leaf Wilderness

Missouri

Bell Mountain Wilderness
Devils Backbone Wilderness
Hercules-Glades Wilderness
Irish Wilderness
Mingo Wilderness
Paddy Creek Wilderness
Piney Creek Wilderness
Rockpile Mountain Wilderness

Montana

Absaroka-Beartooth Wilderness
Anaconda Pintler Wilderness
Bob Marshall Wilderness
Cabinet Mountains Wilderness
Gates of the Mountains Wilderness
Great Bear Wilderness
Lee Metcalf Wilderness
Medicine Lake Wilderness
Mission Mountains Wilderness
Rattlesnake Wilderness
Red Rock Lakes Wilderness
Scapegoat Wilderness
Selway-Bitterroot Wilderness
UL Bend Wilderness
Welcome Creek Wilderness

Nebraska

Fort Niobrara Wilderness
Soldier Creek Wilderness

Nevada

Alta Toquima Wilderness
Arc Dome Wilderness
Arrow Canyon Wilderness
Bald Mountain Wilderness
Becky Peak Wilderness
Big Rocks Wilderness
Black Canyon Wilderness
Black Rock Desert Wilderness
Boundary Peak Wilderness
Bridge Canyon Wilderness
Bristlecone Wilderness
Cain Mountain Wilderness
Calico Mountains Wilderness
Clan Alpine Mountains Wilderness
Clover Mountains Wilderness
Currant Mountain Wilderness
Death Valley Wilderness
Delamar Mountains Wilderness
Desatoya Mountains Wilderness
East Fork High Rock Canyon Wilderness
East Humboldts Wilderness
Eldorado Wilderness
Far South Egans Wilderness
Fortification Range Wilderness
Goshute Canyon Wilderness
Government Peak Wilderness
Grant Range Wilderness
High Rock Canyon Wilderness
High Rock Lake Wilderness
High Schells Wilderness
Highland Ridge Wilderness
Ireteba Peaks Wilderness
Jarbidge Wilderness
Jimbilnan Wilderness
Jumbo Springs Wilderness
La Madre Mountain Wilderness
Lime Canyon Wilderness
Little High Rock Canyon Wilderness
Meadow Valley Range Wilderness
Mormon Mountains Wilderness
Mount Grafton Wilderness
Mt. Charleston Wilderness
Mt. Irish Wilderness
Mt. Moriah Wilderness
Mt. Rose Wilderness
Muddy Mountains Wilderness
Nellis Wash Wilderness
North Black Rock Range Wilderness
North Jackson Mountains Wilderness
North McCullough Wilderness
Pahute Peak Wilderness
Parsnip Peak Wilderness
Pine Forest Range Wilderness
Pinto Valley Wilderness
Quinn Canyon Wilderness
Rainbow Mountain Wilderness
Red Mountain Wilderness
Ruby Mountains Wilderness
Santa Rosa-Paradise Peak Wilderness
Shellback Wilderness
South Egan Range Wilderness
South Jackson Mountains Wilderness
South McCullough Wilderness
South Pahroc Range Wilderness
Spirit Mountain Wilderness
Table Mountain Wilderness
Tunnel Spring Wilderness
Wee Thump Joshua Tree Wilderness
Weepah Spring Wilderness
White Pine Range Wilderness
White Rock Range Wilderness
Worthington Mountains Wilderness
Wovoka Wilderness

New Hampshire

Great Gulf Wilderness
Pemigewasset Wilderness
Presidential Range-Dry River Wilderness
Sandwich Range Wilderness
Wild River Wilderness

New Jersey

Brigantine Wilderness *
Great Swamp National Wildlife Refuge Wilderness

New Mexico

Aden Lava Flow Wilderness
Ah-shi-sle-pah Wilderness
Aldo Leopold Wilderness
Apache Kid Wilderness
Bandelier Wilderness
Bisti/De-Na-Zin Wilderness
Blue Range Wilderness
Bosque del Apache Wilderness
Broad Canyon Wilderness
Capitan Mountains Wilderness
Carlsbad Caverns Wilderness
Cebolla Wilderness
Cerro del Yuta Wilderness
Chama River Canyon Wilderness
Cinder Cone Wilderness
Columbine-Hondo Wilderness
Cruces Basin Wilderness
Dome Wilderness
East Potrillo Mountains Wilderness
Gila Wilderness
Latir Peak Wilderness
Manzano Mountain Wilderness
Mount Riley Wilderness
Ojito Wilderness
Organ Mountains Wilderness
Pecos Wilderness
Potrillo Mountains Wilderness
Rio San Antonio Wilderness
Robledo Mountains Wilderness

Sabinoso Wilderness
Salt Creek Wilderness
San Pedro Parks Wilderness
Sandia Mountain Wilderness
Sierra de las Uvas Wilderness
West Malpais Wilderness
Wheeler Peak Wilderness
White Mountain Wilderness
Whitethorn Wilderness
Withington Wilderness

New York

Otis Pike Fire Island High Dune Wilderness *

North Carolina

Birkhead Mountains Wilderness
Catfish Lake South Wilderness
Ellicott Rock Wilderness
Joyce Kilmer-Slickrock Wilderness
Linville Gorge Wilderness
Middle Prong Wilderness
Pocosin Wilderness
Pond Pine Wilderness
Sheep Ridge Wilderness
Shining Rock Wilderness
Southern Nantahala Wilderness
Swanquarter Wilderness *

North Dakota

Chase Lake Wilderness
Lostwood Wilderness
Theodore Roosevelt Wilderness

Ohio

West Sister Island Wilderness *

Oklahoma

Black Fork Mountain Wilderness
Upper Kiamichi River Wilderness
Wichita Mountains Wilderness

Oregon

Badger Creek Wilderness
Black Canyon Wilderness
Boulder Creek Wilderness
Bridge Creek Wilderness
Bull of the Woods Wilderness
Clackamas Wilderness
Copper Salmon Wilderness
Cummins Creek Wilderness
Devil's Staircase Wilderness *
Diamond Peak Wilderness
Drift Creek Wilderness
Eagle Cap Wilderness
Gearhart Mountain Wilderness
Grassy Knob Wilderness
Hells Canyon Wilderness
Kalmiopsis Wilderness
Lower White River Wilderness
Mark O. Hatfield Wilderness *
Menagerie Wilderness
Middle Santiam Wilderness
Mill Creek Wilderness
Monument Rock Wilderness
Mount Hood Wilderness
Mount Jefferson Wilderness
Mount Thielsen Wilderness
Mount Washington Wilderness
Mountain Lakes Wilderness
North Fork John Day Wilderness
North Fork Umatilla Wilderness
Opal Creek Wilderness
Oregon Badlands Wilderness
Oregon Islands Wilderness *
Red Buttes Wilderness
Roaring River Wilderness
Rock Creek Wilderness
Rogue-Umpqua Divide Wilderness
Salmon-Huckleberry Wilderness
Sky Lakes Wilderness
Soda Mountain Wilderness
Spring Basin Wilderness
Steens Mountain Wilderness
Strawberry Mountain Wilderness
Table Rock Wilderness
Three Arch Rocks Wilderness *
Three Sisters Wilderness
Waldo Lake Wilderness
Wenaha-Tucannon Wilderness
Wild Rogue Wilderness

Pennsylvania

Allegheny Islands Wilderness
Hickory Creek Wilderness

Puerto Rico

El Toro Wilderness

South Carolina

Cape Romain Wilderness *
Congaree National Park Wilderness *
Ellicott Rock Wilderness
Hell Hole Bay Wilderness
Little Wambaw Swamp Wilderness
Wambaw Creek Wilderness
Wambaw Swamp Wilderness

South Dakota

Badlands Wilderness
Black Elk Wilderness

Tennessee

Bald River Gorge Wilderness
Big Frog Wilderness
Big Laurel Branch Wilderness
Citico Creek Wilderness
Cohutta Wilderness
Gee Creek Wilderness
Joyce Kilmer-Slickrock Wilderness
Little Frog Mountain Wilderness
Pond Mountain Wilderness
Sampson Mountain Wilderness
Unaka Mountain Wilderness
Upper Bald River Wilderness

Texas

Big Slough Wilderness
Guadalupe Mountains Wilderness
Indian Mounds Wilderness
Little Lake Creek Wilderness
Turkey Hill Wilderness
Upland Island Wilderness

Utah

Ashdown Gorge Wilderness
Beartrap Canyon Wilderness
Beaver Dam Mountains Wilderness
Big Wild Horse Mesa Wilderness
Black Ridge Canyons Wilderness
Blackridge Wilderness
Box-Death Hollow Wilderness
Canaan Mountain Wilderness
Cedar Mountain Wilderness Area
Cold Wash Wilderness
Cottonwood Canyon Wilderness
Cottonwood Forest Wilderness
Cougar Canyon Wilderness
Dark Canyon Wilderness
Deep Creek North Wilderness
Deep Creek Wilderness
Deseret Peak Wilderness
Desolation Canyon Wilderness
Devil's Canyon Wilderness
Doc's Pass Wilderness
Eagle Canyon Wilderness
Goose Creek Wilderness
High Uintas Wilderness
Horse Valley Wilderness
Labyrinth Canyon Wilderness
LaVerkin Creek Wilderness
Little Ocean Draw Wilderness
Little Wild Horse Canyon Wilderness
Lone Peak Wilderness
Lower Last Chance Wilderness
Mexican Mountain Wilderness
Middle Wild Horse Mesa Wilderness
Mount Naomi Wilderness
Mount Nebo Wilderness
Mount Olympus Wilderness
Mount Timpanogos Wilderness
Muddy Creek Wilderness
Nelson Mountain Wilderness
Paria Canyon-Vermilion Cliffs Wilderness
Pine Valley Mountain Wilderness
Red's Canyon Wilderness
Red Butte Wilderness
Red Mountain Wilderness
San Rafael Reef Wilderness
Sid's Mountain Wilderness
Slaughter Creek Wilderness
Taylor Creek Wilderness
Turtle Canyon Wilderness
Twin Peaks Wilderness
Wellsville Mountain Wilderness
Zion Wilderness

Vermont

Big Branch Wilderness
Breadloaf Wilderness
Bristol Cliffs Wilderness
George D. Aiken Wilderness
Glastenbury Wilderness
Joseph Battell Wilderness
Lye Brook Wilderness
Peru Peak Wilderness

Virginia

Barbours Creek Wilderness
Beartown Wilderness
Brush Mountain East Wilderness
Brush Mountain Wilderness
Garden Mountain Wilderness
Hunting Camp Creek Wilderness
James River Face Wilderness
Kimberling Creek Wilderness
Lewis Fork Wilderness
Little Dry Run Wilderness
Little Wilson Creek Wilderness
Mountain Lake Wilderness
Peters Mountain Wilderness
Priest Wilderness
Raccoon Branch Wilderness
Ramseys Draft Wilderness
Rich Hole Wilderness
Rough Mountain Wilderness
Saint Mary's Wilderness
Shawvers Run Wilderness
Shenandoah Wilderness
Stone Mountain Wilderness
Three Ridges Wilderness
Thunder Ridge Wilderness

Washington

Alpine Lakes Wilderness
Boulder River Wilderness
Buckhorn Wilderness
Clearwater Wilderness
Colonel Bob Wilderness
Daniel J. Evans Wilderness *
Glacier Peak Wilderness
Glacier View Wilderness

Goat Rocks Wilderness
Henry M. Jackson Wilderness
Indian Heaven Wilderness
Juniper Dunes Wilderness
Lake Chelan-Sawtooth Wilderness
Mount Adams Wilderness
Mount Baker Wilderness *
Mount Rainier Wilderness
Mount Skokomish Wilderness
Noisy-Diobsud Wilderness
Norse Peak Wilderness
Pasayten Wilderness *
Salmo-Priest Wilderness *
San Juan Wilderness *
Stephen Mather Wilderness *
Tatoosh Wilderness
The Brothers Wilderness
Trapper Creek Wilderness
Washington Islands Wilderness *
Wenaha-Tucannon Wilderness
Wild Sky Wilderness
William O. Douglas Wilderness
Wonder Mountain Wilderness

West Virginia

Big Draft Wilderness
Cranberry Wilderness
Dolly Sods Wilderness
Laurel Fork North Wilderness
Laurel Fork South Wilderness
Mountain Lake Wilderness
Otter Creek Wilderness
Roaring Plains West Wilderness
Spice Run Wilderness

Wisconsin

Blackjack Springs Wilderness
Gaylord Nelson Wilderness *
Headwaters Wilderness
Porcupine Lake Wilderness
Rainbow Lake Wilderness
Whisker Lake Wilderness
Wisconsin Islands Wilderness *

Wyoming

Absaroka-Beartooth Wilderness
Bridger Wilderness
Cloud Peak Wilderness
Encampment River Wilderness
Fitzpatrick Wilderness
Gros Ventre Wilderness
Huston Park Wilderness
Jedediah Smith Wilderness
North Absaroka Wilderness
Platte River Wilderness
Popo Agie Wilderness
Savage Run Wilderness
Teton Wilderness
Washakie Wilderness
Winegar Hole Wilderness

A.6 National Wild and Scenic River

Alabama

Sipsey Fork of the West Fork River

Alaska

Alagnak River
Alatna River
Andreafsky River *
Aniakchak River
Beaver Creek
Birch Creek
Charley River *
Chilikadrotna River
Delta River
Fortymile River *
Gulkana River
Ivishak River
John River
Kobuk River
Mulchatna River
Noatak River
North Fork Koyukuk River *
Nowitna River
Salmon River *
Selawik River
Sheenjek River
Tinayguk River
Tlikakila River *
Unalakleet River
Wind River

Arizona

Fossil Creek
Verde River

Arkansas

Big Piney Creek
Buffalo River
Cossatot River
Hurricane Creek
Little Missouri River
Mulberry River
North Sylamore Creek
Richland Creek

California

Amargosa River
American (Lower) River *
Bautista Creek
Big Sur River
Black Butte River
Cottonwood Creek
Deep Creek
Eel River *
Feather River
Fuller Mill Creek
Kern River
Kings River
Klamath River *
Merced River
North Fork American River *
North Fork San Jacinto River
Owens River Headwaters
Palm Canyon Creek
Piru Creek
Sespe Creek
Sisquoc River
Smith River *
Surprise Canyon Creek
Trinity River
Tuolumne River
Whitewater River

Colorado

Cache la Poudre River

Connecticut

Eightmile River *
Farmington (Lower) River and Salmon Brook *
Housatonic River
West Branch Farmington River
Wood-Pawcatuck Rivers Watershed *

Delaware

White Clay Creek *

Florida

Loxahatchee River
Wekiva River *

Georgia

Chattooga River

Idaho

Battle Creek
Big Jacks Creek
Bruneau River
Cottonwood Creek
Deep Creek
Dickshooter Creek
Duncan Creek
Jarbidge River
Little Jacks Creek
Middle Fork Clearwater River
Middle Fork Salmon River
North Fork Owyhee River
Owyhee River
Rapid River
Red Canyon
Saint Joe River *
Salmon River
Sheep Creek
Snake River *
South Fork Owyhee River
West Fork Bruneau River
Wickahoney Creek

Illinois

Middle Fork Vermilion River

Kentucky

Red River

Louisiana

Saline Bayou

Maine

Allagash River
York River *

Massachusetts

Nashua, Squannacook and Nissitissit Rivers
Sudbury, Assabet and Concord Rivers
Taunton River *
Westfield River

Michigan

Au Sable River
Bear Creek
Black River *
Carp River *
East Branch Tahquamenon River
Indian River
Manistee River
Ontonagon River
Paint River
Pere Marquette River
Pine River
Presque Isle River
Sturgeon River (Hiawatha National Forest) *
Sturgeon River (Ottawa National Forest) *
Whitefish River *
Yellow Dog River

Minnesota

St. Croix River *

Mississippi

Black Creek

Missouri

Eleven Point River

Montana

East Rosebud Creek
Flathead River
Missouri River *

Nebraska

Missouri River *

Niobrara River

New Hampshire

Lamprey River *
Nashua, Squannacook and Nissitissit Rivers
Wildcat River

New Jersey

Delaware (Lower) River *
Delaware (Middle) River
Great Egg Harbor River *
Maurice River *
Musconetcong River

New Mexico

East Fork Jemez River
Pecos River
Rio Chama
Rio Grande

New York

Delaware (Upper) River

North Carolina

Chattooga River
Horsepasture River
Lumber River
New River
Wilson Creek

Ohio

Big and Little Darby Creeks
Little Beaver Creek *
Little Miami River *

Oregon

Big Marsh Creek
Chetco River
Clackamas River
Collawash River
Crescent Creek
Crooked River
Deschutes River
Donner und Blitzen River
Eagle Creek (Mt. Hood National Forest)
Eagle Creek (Wallowa-Whitman National Forest)
East Fork Hood River
Elk Creek
Elk River
Elkhorn Creek
Fifteenmile Creek
Fish Creek
Franklin Creek *
Grande Ronde River
Illinois River *
Imnaha River
Jenny Creek
John Day River
Joseph Creek
Klamath River
Little Deschutes River
Lobster Creek
Lostine River
Malheur River
McKenzie River
Metolius River
Middle Fork Hood River
Minam River
Molalla River
Nestucca River
North Fork Crooked River
North Fork John Day River
North Fork Malheur River
North Fork Middle Fork Willamette River
North Fork Owyhee River
North Fork Silver Creek
North Fork Smith River
North Fork Sprague River
North Powder River
North Umpqua River
Owyhee River
Powder River
Quartzville Creek
River Styx
Roaring River
Rogue (Upper) River
Rogue River *
Salmon River
Sandy River
Snake River *
South Fork Clackamas River
South Fork John Day River
South Fork Roaring River
Spring Creek
Sycan River
Walker Creek
Wallowa River
Wasson Creek
Wenaha River
West Little Owyhee River
White River
Whychus Creek
Wildhorse and Kiger Creeks
Zig Zag River

Pennsylvania

Allegheny River *
Clarion River
Delaware (Lower) River *
Delaware (Middle) River
Delaware (Upper) River
White Clay Creek

Puerto Rico

Rio de la Mina
Rio Icacos
Rio Mameyes

Rhode Island

Wood-Pawcatuck Rivers Watershed *

South Carolina

Chattooga River

South Dakota

Missouri River *

Tennessee

Obed River

Texas

Rio Grande

Utah

Green River
Virgin River

Vermont

Missisquoi and Trout Rivers

Washington

Illabot Creek
Klickitat River *
Middle Fork Snoqualmie River
Pratt River
Skagit River *
White Salmon River

West Virginia

Bluestone River

Wisconsin

St. Croix River *
Wolf River

Wyoming

Clarks Fork River
Snake River Headwaters

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